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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY,
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PRECLINICAL AND CLINICAL STUDY ON

VAAYU KUNMAM

(DISSERTATION SUBJECT)

For the partial fulfillment of the

requirements to the Degree of

DOCTOR OF MEDICINE (SIDDHA)

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CONTENTS

INTRODUCTION

The siddha system of medicare is one of the most ancient systems contemporaneous with those of the submerged lands, Egyptian, Mesopotamian, Chinese and Grecian medicines. It is the holistic health care system, perfected many thousands of years ago in the Tamil speaking peninsular India.

The granite rocks of the southern peninsula belong to the category of Archaic Rocks and are estimated to be around 2.5 to 4 billion years old. The historical, Anthropological, Archeological and Geographical evidences currently available confirm the antiquity of human civilization in this region. This antiquity also places the Siddha system of health science of this region as the oldest.

Siddha system of medicare is also being called as Tamil Maruthuvam, Chinthamani Maruthuvam and Arivan Maruthuvam. The word Siddh means realized and perfected. Siddhar means perfected or realized saints. Siddhar implies an expert in occultism, alchemy and so on with divine power. Since the advent of Thirumoolar who denotes Siddhi as super natural powers in his text Thirumanthiram, this is popularly called as Siddha system.

Siddha system is associated with Siddhars – the enlightened seekers. Who aimed for ageless body to achieve their highest spiritual goal. Though the system of medicine is associated with Tamilnadu the originators of the system, Siddhars have transcended to different parts of the world.

The principles of siddha system are based on five basic elements, called Earth matter (Mann), Space (Aagayam), air (Vali), fire (Thee) and water (Neer). The formation of the five classical elements as per the Tamil literature

மண்டிணிந்த நிலனும்
நிலமேந்திய விசும்பும்
விசும்புதைவரு வளியும்
வளித்தலைஇய தீயும்
தீ முரணிய நீரு மென்றாங்கு
ஐம்பெரும் பூதத்தியற்கை போல.

- புறநானூறு

“நிலம் நீர்தீவளி விசும்போடைந்தும்
கலந்தமயக் கமுலக மாதலின்“

-தொல்காப்பியம்

It means the world is formed of the five elements.

The concepts of the five element constituting macrocosm (universe level) all the way down to the microcosm (sub atomic or even meta physical-level). This is better described by the verse of Siddhar Chattamuni.

“அண்டத்தில் உள்ளதே பிண்டம்
பிண்டத்தில் உள்ளதே அண்டம்
அண்டமும் பிண்டமும் ஒன்றே
அறிந்து தான் பார்க்கும்போதே”

- சட்டமுனி ஞானம்.

This is very basic of understanding that the seven physical constituents (Udal thathus) and three biological humors (Uyir thathus) are all based of the five elements. Change in life style i.e. Food habits and physical activities will make an imbalance of three biological humors leads to pathological changes in the body and mind.

“மிகினுங் குறையினுங் நோய் செய்யு நூலோர்
வளி முதலா வெண்ணிய மூன்று”

- திருக்குறள்

Disharmony with environment is the cause of most of the diseases. Both extrinsic and intrinsic factors are responsible for the manifestation of diseases. Uyir Tathus when deranged become thodams resulting in various diseases numbering 4448 as per Siddha text.

Kunmam is a disease one among them occurs due to the derangement of Uyir tadhu Vali as per Siddhar Theriyar

“தொடர் வாத பந்தமலாது குன்மம் வராது”

Siddhar Yugi in his Yugi Vaithiya Chinthamani classified Kunmam in to eight types. One among them is Vaayu kunman. Melnokku kaal and Keezh nooku kaal are primarily affected in Vaayu kunmam. The signs and symptoms of Vaayu kunmam may be correlated to Gastritis in modern system of Medicine. The symptoms are as follows. Indigestion, Nausea or Vomiting, Aversion to food, Flatulence, Gripping abdominal pain and Generalized weakness.

In the Siddha Text 'Yakoobu Vaidhiya Chinthamani 700' the drug "Vediyuppu Kattu" is indicated specifically for Atta Kunmam and Vaayu. The main ingredients of Vediyuppu Kattu are Vediyuppu and Seenam. As per the Siddha literature Pathartha Guna Chinthamani Vediyuppu and Seenam are found to be very efficacious in the treatment of 'Vaayu Kunmam'.

The above mentioned formulation has not undergone any clinical trial so far. Hence i selected Vediyuppu Kattu for further clinical evaluation in Vaayu Kunmam.

AIM AND OBJECTIVES

AIM

The aim of the study is to evaluate the safety and therapeutic efficacy of the Siddha formulation "Vediyuppu Kattu" (Internal Medicine) in the treatment of "Vaayu Kunmam"(Gastritis).

OBJECTIVES

1. PRIMARY OBJECTIVE

To evaluate the therapeutic efficacy of the Siddha formulation "Vediyuppu Kattu" (Internal Medicine) in the treatment of "Vaayu Kunmam" (Gastritis).

2. SECONDARY OBJECTIVE

- To evaluate the safety profile of the trial drug (Acute and Long term toxicity studies) to be carried out as per W.H.O guidelines 1993.
- To conduct a clinical trial with a well defined proforma on the patients identified with "Vaayu Kunmam"
- To screen the biochemical constituents of the trial drug "Vediyuppu Kattu".
- To study the influence of other co factors such as age, sex, dietary habits, family history, socio economic status, habitat etc on the disease.
- To find out the side effects / adverse effects of the drug "Vediyuppu Kattu" if any.

SIDDHA ASPECT

KUNMAM

SYNONYM:

Kunmam, Vaittrul puralal, Vaittru puraludan nothal.

DEFINITION:

Kunmam is a form of dyspepsia with burning sensation and gnawing pain in gastrium, gastric eructation, nausea, vomiting and indigestion. These terms refer to deterioration of both body and mind due to pain.

NOI VARUMVAZHI (ETIOLOGY)

ACCORDING TO THERIYAR PINI ANUGA VIDHI:

"தொடர் வாத பந்தமலாது குன்மம் வராது"

- தேரையர்

As per the Theriyar Text, Kunmam occurs due to the repeated derangement of Vaatham. Primarily Udhanan vaayu, Abanan vaayu and Samanan vaayu gets affected.

ACCORDING TO YUGI VAIDHYA CHINTHAMANI 800:

"செய்யான **குன்மத்தி தோற்றந்** தன்னைச்
செப்பிடவே துவர்ப்பான பொசிப்பி னாலும்
மைய்யான மங்கையுடன் மருவ லாலும்
வகையாகுங் கிழங்கு வகை யருந்த லாலும்
உய்யான மிளகு வகை யுரைப்பி னாலும்
உருபசியை யடக்கிடும் மந்தத் தாலும்
தையாள சண்டாள கோபத் தாலும்
சலிப்பாலும் குன்மம் வந்தடையும் பாரே".

- யூகி வைத்திய சிந்தாமணி

“பார்க்கவே குருநிந்தை பண்ணி னோர்க்கும்

பாலகரைச் சிசுவைபட்டினிவைத் தோர்க்கும்

மார்க்கும்மா தாவைப்பி தாவை நிந்தை

வஞ்சனைதான் செய்தோர்க்கு மடந்தை தன்னை

கார்க்கவே கற்பழித்த காமுகர்க்கும்

கருதியே சிவநிந்தை பண்ணி னோர்க்கும்

ஆர்க்கவே யஷ்ட **குன்ம மணுகு** மென்ற

அரன்சொல்லத் தேவிசொன்னாள றிந்து பாரே”.

- யூகிவைத்திய சிந்தாமணி

Yugi said that, there are two main reasons for the onset of Kunmam

1. Seiyal maarupadugal (Change in personal habits)
2. Manamarupadugal (Altered mental status)

1. Personal habits:

- Intake of contaminated food and water
- Excessive intake of foods that produces indigestion and flatulence
- Excessive intake of tubers
- Excessive intake of spicy items
- Starvation
- Excessive sexual indulgence

2. Mental status:

- Increased anger
- Mental depression
- Disobedience towards God, Teacher, and Parents.
- Ill treating the parents,
- Letting the children and infants in a starving condition,
- Involving in the antisocial activities such as rape etc.

AGASTHIYAR VAITHYA KAVIYAM-1500:

"மேவிய **குன்மந்தான்** னெழுந்ததோர் விதங்கள் சொல்வோம்

பாரிய பித்ததோடும் வாதமும் பரிந்து சேரில்

பாகிய வண்ண நீரும் வாந்தியாகும் பாரே".

– அகத்தியர் வைத்திய காவியம் 1500

According to 'Agasthiyar vaithya kaviyam' the combination of Pitham with Vaatham induces Kunmam leads to vomiting of food and water.

AGATHIYAR GUNA VAGADAM:

"தானான **குன்ம வகை எட்டு** மிந்தத்

தாரணியி லுண்டான விதத்தைக் கேளாய்

ஊனான அசீரணந் தானந்த ரோகம்

உற்பத்தியாகு மென்றே உறுதி சொல்லு".

– அகத்தியர் குணவாகடம்

Agathiar assures all the eight types of Kunmam are caused by indigestion of food.

AGATHIYAR KANMA KANDAM:

"குன்மம் வந்த காரணந்தானேதோவெனில்

குடிக்கெடுத்த வயிற்றெரிச்சல் கொண்டபாவம்

நன்மையில்லா மனக்கசடு பெருத்தபாவம்

நல்லோரை மனம் நோகப் பழித்த பாவம்

தன்மையில்லா பிறர்பசிக்க வுண்டபாவஞ்

சண்டாள தத்துவமே செய்த பாவம்

இம்மையிலே இப்பாவம் வந்து சுற்றி

யதனாலே **குன்மமென** வெடுத்த வாறே".

– அகத்தியர் கன்ம காண்டம்

Agathiar in his Kanma kandam states the cause for Kunmam as

- Sin pertaining to those who have deprived the dwellings of others and humiliating elders.
- Consuming food in the presence of starved people.
- Slanderers acquire the disease by their action and covetous mind in the past.

PARARASA SEKARAM:

"கயமான குடலி னுள்ளே

கல்லுமி நெல்லு மாமே

கல்லொரு மயிரா யுள்ள

கசடது குடலிற் பற்றி

வல்லபாங் கதுவா யன்னஞ்

செரியாத மாசி னாலே

மெல்லிய கிருமி கொண்டு

குன்ம நோய் மருவுங் காணே".

– பரராச சேகரம்

Intake of food contaminated with stones, rice husks, hair causes indigestion which in turn leads to infection by microorganisms results in Kunmam.

THIRUMOOLAR KARUKKADAI VAITHYAM:

"ஏற்றிய குன்மம் பெருத்த விதங்கேள்

தோன்றிய பித்தமும் வாயுவும் தொந்திக்கில்

சேற்றிய வன்னம் செரிக்கில் வனப்பெறும்

மாற்றிய நீருதி வாந்தியுமாமே".

- திருமூலர் கருக்கடை வைத்தியம்

If Azhal and Vali together affected it leads to Kunmam.

RESTRICTIONS OF BODY FUNCTIONS:

"வாதத்தை தடை செய்தாலோ

மார்பினோய் குன்மம் வாயு"

– அறுசீர் விருத்தம்

As a result of prevention of the movement of vaatham, kunmam will occur.

"விழியினில் நீரடக்கில் விதமான இருத்துரோகம்

வழியடு பீநிசங்கள் வந்திடும் நேத்ரரோகம்

அழுகிடும் சிரசின் ரோகம் அதனுடன் வாதம் கூடில்

பழுதுடல் பண்ணிக் **குன்மம் பற்றிடும்** குணமுமுண்டே"

– அறுசீர் விருத்தம்

Preventing tears leads to disease of Heart, sinuses, eye and head. when vaatham adds to it causes Kunma noi.

PATHARTHAGUNA CINTHAMANI:

"ஊனுக்கு முன் நீருண்டாற்

வினுக்கு குன்மம் விளையுங்காண்"

Intake of water before taking food leads to the genesis of Kunmam.

AAVIYALLIKUM AMUTHAMURAI CHURUKKUM BY SIDDHARS:

According to the text aaviyallikum amuthamurai churukkum**,** Kunma noi there will be excess secretion of Analapitham (Hcl) which induce gastric eructation, dyspepsia, flatulence with pain.

CLASSIFICATION OF KUNMAM:

YUGI CLASSIFICATION:

Yugi classified the Kunmam into 8 types

1. Vaayu kunmam
2. Vatha kunmam
3. Pitha kunmam
4. Eri kunmam
5. Vali kunmam
6. Satthi kunmam
7. Sanni kunmam
8. Sethuma kunmam

THIRUMOOLAR CLASIFFICATION:

Classified the kunmam into 8 types

Due to derangement of vali:

1. Vatha kunmam
2. Soolai kunmam
3. Vali kunmam

Due to derangement of pitham:

1. Eri kunmam
2. Pitha kunmam
3. Satthi kunmam

Due to dearangement of kabam:

1. Iya kunmam
2. Sanni kunmam

ACCORDING TO T.V.SAMBA SIVAM PILLAI DICTIONARY:

Kunmam is classified into 13 types

1. Eri kunmam
2. Vali kunmam
3. Satthi kunmam
4. Kasa kunmam
5. Thontha kunmam
6. Sanni kunmam
7. Valineer kunmam
8. Purattal kunmam
9. Pitha kunmam
10. Vatha kunmam
11. Kari kunmam
12. Silethuma kunmam
13. Pulippu kunmam

ACCORDING TO DANVANTHRI VAITHYAM:

Danvanthri says that 108 diseases arise from the abdomen; eight among them are kunmams which are as follows

1. Vatha gknmam
2. Vali kunmam
3. Satthi kunmam
4. Soolai kunman
5. Pitha kunmam
6. Susai kunmam
7. Kaba kunmam
8. Eri kunmam

ACCORDING TO YUGI VAITHIYAKAVIYAM:

Classified the kunmam into 11 types

1. Vali kunmam
2. Maha kunmam
3. Bethi kunmam
4. Vatha kunmam
5. Soolai kunmam
6, Pitha kunmam
7. Eri kunmam
8. Satthi kunmam
9. Kabala kunmam
10. Ratha kunmam
11. Susai kunmam

AATHMA RATCHAMIRTHAM ENNUM VAITHYA SARASANGIRAKAM:

Classified the kunmam into 8 types

1. Vatha kunmam
2. Pitha kunmam
3. Silethuma kunmam
4. Vali kunmam
5. Satthi kunmam
6. Eri kunmam
7. Soolai kunmam
8. Kabala kunmam

VAAYU KUNMAM

வாயு குன்மம்

வேறு பெயர்:

பாயுரு குன்மம்,

சூலை குன்மம்.

AS PER YUGI VAITHYA CHINTHAMANI

“பார்க்கவே வாயு குன்மம் பகரக் கேளாய்
பருகியதோர் பதார்த்தங்கள் செரித்திடாது
தேர்க்கவே யசனந்தான் செல்லா தாகும்
துருத்திகொண் காற்றதுபோல் வயிறு முப்பும்
ஊர்க்கவே உள்பெலனும் கெடுப்ப தாகும்
உடலுலரும் நடைகுறையும் ஓய்ச்சலாகும்
வேர்க்கவே யடிவயிறு தனிலே வந்து
மிகப்புரண்டு வில்லுப்போல் விகுத்தலாமே“

- யூகி வைத்திய சிந்தாமணி

CLINICAL FEATURES:

- Indigestion,
- Vomiting the residues of last food intake,
- Aversion to food,
- Flatulence,
- Fatigue,
- Generalized weakness,
- Sweating
- Gripping abdominal pain,

AS PER NAADI NOOL:

“பாரப்பா வாய்வு வாதம்

பரிவுடன் அபான னோங்கி

ஓரப்பா கும்பி தன்னில்

உருண்டுதான் மிகவே நோகும்

கோரப்பா நெஞ்சு குத்துங்

குடலையு முறுக்கிக் கொண்டு

வாரப்பா வலிக்கு மெத்த

வாசமாய் வழங்கும் வாய்வே“

- நாடி நூல்

CLINICAL FEATURES:

- Increased vaatha humor
- Flatulence with painfull abdomen.
- Pricking pain of the chest.
- Gripping abdominal pain,

In T.V.S Dictionary description:

Vaayu Kunmam is one of the classifications of Kunmam disease.

A form of dyspepsia marked by following symptoms viz- Upper abdominal pain, unusual secretion of saliva, indigestion, belching, etc…

YUGI VAITHYA KAAVIYAM:

வாயு குன்மம் (சூலை) குன்மத்தின் இயல்பு:

“ மேல்வயிர திலேவந்து மிகப்படவலித்தெரித்து

சாலவேவாய்நீர்ஊறித் தரித்திடா தேப்பம் உண்டாய்

சீல மாம் குளிர் எழும்பிச் சிறுகவுள் வெதும்பும் என்ன

கோலமாம் குழலினாளே சூலை குன்மம் என்னலாமே“

– யூகிமுனி வைத்திய காவியம்

1. Pain in the upper abdomen
2. Excessive salivation in mouth
3. Belching
4. Rigor
5. Raised body temperature

AATHMA RATCHAMIRTHAM ENNUM VAITHYA SARASANGIRAKAM:

1. Burning sensation in the upper abdomen
2. Excessive salivation, Nausea
3. Belching
4. Shivering
5. Pain in the joints.

MUKKUTRA VERUPADUGAL (Pathogenesis)

Disease occurs due to the derangement in

- Uyir thathukkal
- Udalthathukkal
- kaala marupadu (seasonal changes)
- Thinai (living lands) and
- Udal vanmai.

Mukkutra Iyal

The function of the three uyir thathus:

a) **Vali – (Kattru + Veli)**

b) **Azhal – (Thee)**

c) **Iyyam – (Neer + Mann)**

The alteration of three thathu in their reaction to extrinsic or intrinsic factors results in disharmony. This altered harmony and balance variation of the three thathus results in disease. Their natural ratio (1 :½:¼) to each other is discerned by the physician at the wrist and each naadi is individually assessed for its strength, speed and regularity.

The following poem describes the origin of three uyir thathus

"இருப்பான நாடி எழுபதோடீரா
யிரமான தேகத்தில் ஏலப் -பெருநாடி
ஒக்கத் தசமத் தொழிலை யூக்க தசவாயுக்கள்
தக்கபடியானதே சார்பு"

"சாருந் தசநாடி தன்னில் மூலம் மூன்று
பேருமிடமி பிங்கலையும் பின்னலுடன்- மாறும்
உரைக்கவிரற் காற்றொட்டுணர்த்து மேநாசி
வரைச்சுழி யோமையத்தில் வந்து"

"வந்தகலை மூன்றில் வாய்வாமபானனுடன்
தந்த பிராணன் சமானனும் சந்தமுறக்
கூட்டுறவில் ரேசித்தல் கூறும் வாதம் பித்தம்
நாட்டுங்கபமே யாம் நாடு"

– கண்ணுசாமியம்

The three thathus are manifested at the wrist and are individually and collectively assessed. These three humour are divided in to various types and have their functions specifically.

FUNCTIONS OF VALI

"ஒழுங்குடள் தாதேழ்மூச் சோங்கி இயங்க
எழுச்சிபெற எப்பணியும் ஆற்ற - எழுந்திரிய
வேகம் புலன்களுக்கு மேவச் சுறுசுறுப்பு
வாகளிக்கும் மாந்தர்க்கு வாயு"

– மருத்துவ தனிப்பாடல்

According to the physiological function, vali is classified into ten types. They are

1. Uyir Kaal (Pranan)

This is the first of ten vital airs. According to Yugimuni, pranan starts from moolatharam and comes through the nostrils and causes the act of inspiration and the expiration. The inspiration and expiration are not equal and their ratio is 8:12. This is responsible for the respiration of the tissues, controlling knowledge, mind and five sense organs and helps in the digestion of ingested food.

2. Kizhnokkumkaal (Abanan)

Abanan, the downward air, starts from swathittanam and descends towards the pelvis and is responsible for excretion of urine and faeces ejaculation of semen and menstruation. This is green in color. It contracts the anus. It helps to take the essence of the digested food to the different parts of the body which requires food. The god attributed is varadarajan.

3. Paravukaal (Viyanan)

Viyanan arises from the shoulders and go through all the 72,000 nerves and thus activate voluntary and involuntary movements of the body and thus make them to extend and contract. This is responsible for the motor and sensory function of the entire body. This appreciates the sense of touch, helps to take the essence of the food to the strategic points of the body and guards the body.

4. Melnokkumkaal (Udhanan)

Udhanan starts from the umbilical region (Udarakkini) and takes the essence of food and stations it at appropriate places. It helps in digestion and assimilation of food. It is responsible for all the upward movements.

5. Nadukkaal (Samanan)

Samanan starts from the umbilical cord and spread out up to the lowerlimb. This is responsible for the balance of the other four vathas. It equalizes the six tastes, water, food etc and helps in assimilation.

6. Naagan

Naagan is responsible for higher intellectual functions, hearing, thinking etc. It causes closing and opening of the eye lids. Its derangement causes impaired memory, lack of coherent thinking.

7. Koorman

Koorman starts from the mind and causes winking of the eyelids, yawning and closure of mouth.It gives strength to the body and helps to visualize things and causes lacrimal secretion

8. Kirukaran

Kirukaran lies in the tongue and causes nasal and salivary secretions. Hunger, concentration of the mind on one particular thing, Sneezing and cough are attributed to kirukaran. It is black in colour

9. Devadaththan

Laziness is attributed to devadaththan. Occular movements and human passions are attributed to this vaatham. It stays at the anus or at urinary orifice.

10. Dhananjeyan

Dhananjeyan functions from the nose and it is responsible for the bloating of the body after death and also for the foul smell.

In Vaayu Kunmam, Pranan, Samanan and Udhanan will be mainly affected due to poor appetite, gastro intestinal symptoms and indigestion respectively.

Abanan and Viyanan may also be affected due to changes in bowel movements and poor assimilation.

FUNCTIONS OF AZHAL

"பசிதாகம் ஓங்கொளிகண் பார்வைபண் டத்து

ருசிதெரி சத்தி வெம்மை வீரம் - உசித

மதிகூர்த்த புத்திவனப் பளித்துக் காக்கும்

அதிகாரி யாங்கா னழல்"

– மருத்துவ தனிப்பாடல்

Azhal is functionally divided in to five types. They are

1. Aakkanal (Anala pitham)

It lies between the stomach and the intestine and causes digestion and dries up moist ingested substances. Its derangement produces indigestion, acidity, burning sensation in the middle of the chest, throat and stomach.

2. Vanna eri (Ranjaga pitham)

This fire lies in the stomach and gives red colour to the chyme and produces blood. It improves blood. Its derangement causes disease of the liver and spleen and disease of the blood.

3. Attralangi (Sadhaga pitham)

This fire lies in the region of intellectual function and helps for the accomplishment of desired functions.

4. Nokku Azhal(Alosaga pitham)

It lies in the eyes and causes the faculty of vision. It helps to visualize things

5. Ollolithee (Prasaga pitham)

It gives color and complexion and brightness to the skin.

In Vaayu Kunmam Anala Pitham is mainly affected due to indigestion, acidity, burning sensation in the middle of the chest. In later stage Attralangi and Vannaeri will be affected.

FUNCTIONS OF IYAM

"திடமீயு மென்பிணைப்புத் திண்மையுற்ற யாப்பும்

அடலேர் வழுவழுப்பும் ஆக்கைக் - கிடர்க்கு

வெருவாப் பொறுமையும் மேலான காப்பாம்

பெருமைத்தா மையமெனப் பேசு"

\- மருத்துவ தனிப்பாடல்

It is of five types. They are

1. Alli Iyyam (Avalambagam)

It lies in the lungs and helps in respiration. It causes firmness of the limbs. This is vital among all types of kapham. It controls the other four kapham and maintains equilibrium

2. Neerpi Iyyam (Kilaethagam)

It lies in the stomach. It mixes the consumed food and water and promotes the digestive process. Protects the upper and middle abdomen from hot, irritant and cold food as well as from the secretions of anala pitham.

3. Suvaikanna Iyyam (Pothagam)

It lies in the tongue and helps to realize the taste of the consuming food. Potentially harmful substances are initially rejected by this taste screen.

4. Niraivu Iyyam (Tharpagam)

Sustaining in the head, this gives refrigerant effect to cool the eyes and other sense organs.

5. Ondri Iyyam (Santhigam)

Sustaining in the joints this makes them more freely and easily.

In Vaayu Kunmam, Kilaethagam may be affected due to altered digestive process and Pothagam may be affected due to altered taste sensation.

PARUVAKALAM (SEASONS)

According to ancient Tamilians, the one year is divided in to six seasons and each season consists of two months and the year starts from Margazhi

1. **Munpani** - Early winterseason from Markazhi to thai (Dec16 to Feb15)
2. **Pinpani** - Latter winter season from Masi to panguni (Feb16 to Apr15)
3. **Elavenil** - Early summer season from Chithirai to vaikasi (Apr16-Jun15)
4. **Mudhuvenil** - Latter summer season from Aani to aadi (Jun16 to Aug15)
5. **Kaar** - Early rainy season from Aavani to puratassi (Aug16 to Oct15)
6. **Koothir** - Latter rainy season from Iypasi to karthigai (Oct to Dec15)

The disease Vaayu kunmam mostly aggravated during the seasons Elavenil (early summer) and Muthuvenil (Late summer).

The winter season gives good health to the man, early summer and latter rainy gives moderate health. Whereas early rainy and latter summer are more prone to diseases, that's why siddhars called it as Aanaga kalam

THINAI (LAND)

Siddhars classified the lands in to five types. They are

1. **Kurungi** - Mountain range
2. **Mullai** - Pastoral area of the forest
3. **Marudham** - The fertile river bed
4. **Neidhal** - The coastal region
5. **Paalai** - Arid desert

- Marudha nilam is the fertile area where no disease occurs
- It is reportedly higher in Palai, Neithal and Mullai area's when compared to others.

Relation between Mukkutram, Kaalangal and Thinnaigal

Mukkutram	Paruvakalam (Seasons)			Thinai
	Thannilai vazharchi (Accumulation)	**Vetrunilai vazharchi (Aggravation)**	**Thannilai adaithal (Alleviation)**	
Vaatham	Mudhuvenil kalam	Kaar kalam	Koothir kalam	Vatha disease is more prevalent in **Neithal** land
Pitham	Kaar kalam	Koothir kalam	Munpani	Pitha disease is more prevalent in **Mullai** land
Kapham	Pinpani	Elavenil kalam	Mudhuvenil kalam	Kaphadisease is more prevalent in **Kurunchi** land

Gnanenthriyam:

Mei - feels all types of sensation.

Vaai - for identifying taste.

Kan - for vision

Mooku - for identifying the smell

Sevi - for hearing

In Vaayu kunmam, mei was affected due to the presence of epigastric tenderness and vaai may affected due to impairment of taste sensation

Kanmenthriyam:

Kai - majority of normal works done by hand

Kaal - for walking

Vaai - for speaking

Eruvai – for defeacation

Karuvai - for reproduction

In Vaayu Kunmam, Eruvai may be affected due to variation in bowel habits.

UDAL VANMAI (IMMUNITY)

Siddhars classify Udal vanmai as three types. They are

1. Iyarkai vanmai
2. Kala vanmai
3. Seyarkai vanmai

Since Vaayu Kunmam patients are suffering with epigastric pain, nausea, indigestion as principal symptom, we came to understand that it is because of alteration in Vali thathu and Vali should be the primary causative factor (Muthanmai kutram). It can be confirmed by the words of great Siddhar Therayer

"தொடர் வாத பந்தமலாது குன்மம் வராது"

- தேரையர்

EZHU UDAL KOORUGAL (SEVEN PHYSICAL CONSTITUENTS)

"இசரமிரத் தந்தசை நெய் நிணமென்பு மச்சைவீந்தென்றேழும் முறையே"

சரதமொடு மெய்மனத்து நிறைவுதரும்உயிருட்டுத்தாங்கி யிருக்கும்

உரமுதவும் மேடுபள்ளம் நிரவும் நெய்ப் பசையூட்டும் ஓங்கி நிறுத்தும்

பரந்தென்பின் துளைகடொறும் நிரம்பிடுங்கள் முளைதோன்றப் பண்ணும் தெரிவாய்"

- சித்த மருத்துவாங்கச் சுருக்கம்

The human body is made of seven basic physical constituents. These constituents should be in harmony and function normally. Any variation in them will lead to their functional deviations. The Natural characters of the seven physical constituents are

1. **Saaram** (Chyle)

This gives mental and physical perseverance

2. **Senner** (Blood)

Imparts color to the body, nourishes the body and is responsible for the ability and intellect of an individual

3. **Oon** (Muscle)

It gives shape to the body according to the physical activity and covers the bones

4. **Kozhuppu** (Fat)

It lubricates the joints and other parts of the body to function smoothly

5. **Enbu** (Bone)

Supports the frame and responsible for the postures and movements of the body

6. **Moolai** (Bone marrow)

It occupies the medulla of the bones and gives strength and softness to them

7. **Sukkilam/Suronitham** (Sperm / Ovum)

It is responsible for reproduction

THE VARIATIONS OF THE PHYSICAL CONSTITUENTS

1. SAARAM

Increased Saaram: Leads to diseases of increased kapham like loss of appetite etc.

Decreased Saaram: Leads to loss of weight, tiredness, lassitude, dryness of the skin and diminished activity of the sense organs.

2. SENNER

Increased Senner: Causes boils in different parts of the body throbbing pain, anorexia, mental disorder, splenomegaly, Colicky pain, increased blood pressure, reddish eye and Skin, jaundice, haematuria etc.

Decreased Senner: Leads to anaemia, tiredness, neuritis and lassitude, Pallor of body.

3. OON

Increased Oon: Oon in excess causes cervical lymph adenitis, venereal ulcer, tumor in face, abdomen, thigh genitalia etc are the signs of increased Oon.

Decreased Oon: Leads to impairment of sense organs, joints of jaw, thigh and genitalia gets shortened.

4. KOZHUPPU

Increased Kozhuppu: Identical to that of increased Oon associated with Dyspnoea and loss of acidity.

Decreased Kozhuppu: Leads to pain in the hip region and diseases of the spleen.

5. ENBU

Excess Enbu: Growth in bones and teeth

Decreased Enbu: Loosening of teeth and nails and Splitting and falling of hair

6. MOOLAI

Increased Moolai: Causes heaviness, swollen eyes, swollen phalanges, Oliguria and non healing ulcers**.**

Decreased Moolai: Causes osteoporosis and sunken eyes

7. SUKKILAM / SURONITHAM

Excess Sukkilam/Suronitham: Causes lust towards women and cause Urinary calculus.

Decreased Sukkilam/Suronitham : Causes failure in reproduction, pain in the genitalia.

In ***Vaayu Kunmam*** Saaram (Generalised weakness), Senner (Pale conjunctiva) and Oon (loss of Weight) may be affected.

PINIYARI MURAIMAI (DIAGNOSIS)

It means the method of diagnosing the disease.

"மதித்திடற்கருமை வாய்ந்த
மாண்பரிகாரமெல்லாந்
துதித்திட வுணர்ந்தானேனுந்
துகளறப் பிணியின்றன்மை
பதித்திட வுணரானாகிற்
பயனுறானாகலானே
விதித்திடு பிணித்திறத்தை
விளம்புது முதற்கண்மன்னோ"

- சிகிச்சா ரத்தினதீபம் - பக்கம் 3

The above poem describes that diagnosis is very important for the physician to treat the disease.

Four steps are followed in diagnosing the disease. They are,

a. Poriyaal arithal

b. Pulanal therthal

c. Vinaathal

d. Envagaithervu

In detail,

a. PORIYAAL ARITHAL

In this the physician should carefully observe the changes that occur in the five sensory organs (Porigal) of the patient.

b. PULANAL THERTHAL

The physician carefully applies his five senses of perception, smell, taste, vision, touch and sound to understand the condition of the patient.

c. VINAATHAL

The physician should interrogate about the patients name, age, occupation, socio economic status, food habits, history of past illness, history of present illness, family history, marital status, menstrual history and frequency of pain.

d. ENVAGAI THERVUKAL

"நாடி பரிசம் நா நிறம் மொழி விழி
மலமூத்திரம் மிவை மருத்துவராயுதம்"

- மருத்துவ நூல் வல்லோர்

"நாடியால் முன்னோர்சொன்ன நல்லொலிபரிசத்தாலும்
நீடிய விழியினாலும் நின்ற நாக்குறிப்பினாலும
வாடிய மேனியாலும் மலமொடு நீரினாலும் சூடிய
வியாதிதன்னைச் சுகமுடன் அறிந்துபாரே"

- அறுசீர்க் கழிநெடிலாசிரிய விருத்தம்

Nowadays advanced diagnostic tools have been developed by modern bio-medical scientists. But Siddhars have given eight diagnostic methodological tools. They are called as Envagai thervu.

Eight Fold Systems of Clinical Assessments

Siddhars have given eight diagnostic methodological tools. They are,

1. Naa
2. Niram
3. Mozhi
4. Vizhi
5. Malam
6. Moothiram
7. Naadi
8. Parisam

GENERAL FINDINGS

1. NAA

i. Signs and symptoms in the tongue are noted here.

ii. Color, salivary secretion, ulcers, coating, inflammation, taste changes, and its nature are generally noted.

In VaayuKunmam the Naa may be affected due to the pallor and dryness of the tongue with Sour / Bitter taste sensation.

2. NIRAM

i. The color of the skin is noted here.

In VaayuKunmam the Niram may be affected due to the Pale / Yellowish colour of the body.

3. MOZHI

i. Character of the speech is noted, mainly uratha olli (high pitched), thazhntha olli (low pitched), or resembles the sound of any instrument.

In VaayuKunmam the Mozhi will be affected to the patients who have severe epigastric pain leading to the thazhntha olli (Low and soft).

4. VIZHI

i. Character of the eye is noted. Color, warm, burning sensation, irritation, visual Perception.

In VaayuKunmam the Vizhi may be affected due to the pale in colour and burning sensation of the eyes.

5. MALAM

i. The stools are examined for Erugal (constipation), Elagal (Loose stools), Color (Niram) and Froth (Nurai).

In VaayuKunmam the Malam will be affected (either constipation or diarrhea). Nurai may not present.

6. MOOTHIRAM

a. Neerkuri

The urine is examined for its

(i) Niram (Colour)
(ii) Adarthi (Specific gravity)
(iii) Manam (Odour)
(iv) Nurai (Froth)
(v) Enjal (Deposits) .

b. Neikuri

"அருந்து மாறி ரதமும் அவிரோதமதாய்

அக்கல் அலர்தல்அகாலவூன் தவிர்தழற்

குற்றளவருந்தி உறங்கி வைகறை

ஆடிக்கலசத் தாவியே காதுபெய்

தொருமுகூர்த்தக் கலைக்குட்படு நீரின்

நிறக்குறி நெய்குறி நிருமித்தல் கடனே"

- தேரையர் நீர்க்குறி நெய்க்குறி நூல்

The early morning freshly voided urine of the patient is analyzed by dropping a drop of gingili oil on the surface of the urine sample. The accumulation, formations, changes, and dispersal under the sunlight without any external disturbances of the urine sample can be noted.

- Vatha neer - The oil spreads like snake
- Pitha neer - The oil spreads like ring
- Kapha neer - The oil stood like pearl
- If the oil spreads gradually, it indicates good prognosis

- If the oil spreads fast or gets mixed completely with urine or sinks in urine, it suggests bad prognosis.

Since VaayuKunmam is due to the derangement of vaatham and pitham the neikuri will be in snake pattern and ring like.

7. NAADI

Naadi is a Unique Siddha Pulse reading method and it should be felt and not read. Different characters of Vazhi , Azhal, Iyam like branching, jumping, mixing, rotating and compression can be identified in diseased conditions.

Characters of the Naadies

Identification (finger)		**Index**	**Middle**	**Ring**
Strength (In unit)		1	½	¼
Pattern	(Male)	Hen	Tortoise	Snake
	(Female)	Snake	frog	Swan

"பார்க்கவே பெண்களுக் கிடதுபக்கம்
பதிவாகப் பார்த்திடவே பகரபக்கேளும்
கார்கவே வாதமது சர்ப்பம் போலாய்
கனமான பித்தமது தவளை போலாஞ்
சேர்க்கவே யையமென்ற நாடிதானுஞ்
சிறுநடையா வன்னம் போற் செழிப்பாய்க் கானும்"

-பதிணென் சித்தர் நாடிசாத்திரம் (பரிபூரண நாடி)- பக்கம்2

In VaayuKunmam the Naadi nadai will be as follows;

1. Vaatha Naadi

வாதமெனும் நாடியது தோன்றில்
சீதமந்தமொடு வயிறு பொருமல் திரட்சி வாய்வு
சீதமுறுங் கிராணி மகோதரம் நீராமை

திரள்வாய்வு சூலை வலிகடுப்புத் தீரை

நீதமுறுங் **கிருமிகுன்மம்** அண்ட வாதம்

. . . . . .

. . . . . .

- சதகநாடி

2. Pitha Vaatham

சிறப்பான பித்தத்தில் வாத நாடி

சேரிலுறு தாதுநட்ட முதர பீடை

உறைப்பாகச் **செரியாமைக் குன்மஞ்** சூலை

.....

- சதகநாடி

3. Sethuma Vaatham

தொந்தித்த சேத்துமத்தில் வாயுகூடித் தொடர்ந்த

குன்மம்நெஞ் சடைப்பு *சுவாசகாசம்*

.....

- சதகநாடி

In VaayuKunmam any one of the following naadies will be observed vatha naadi, vatha pitham, vatha kappam, pitha vaatham, kappa vaatham, kappapitham.

8. PARISAM

In parisam the following observations such as temperature, sensory impairment, mass, nodes, swelling, and texture of the skin, pain, hardness, edema will be noted through palpitation..

In VaayuKunmam the parisam may be affected (tenderness in the Epigastric region).

NOIKANIPPU VIVAATHAM:

Vatha Kunmam is differentiated from other types of Kunmam as follows:

1. ERI KUNMAM:

“திடுக்குமா மெரிகுன்மச் செயலைக் கேளாய்
சிறுவயிற்றி லெரிந்துமே குடல் குமுறும்
வடுக்கும்வாய் நீர்சுழற்றுள் தலைவ லிக்கும்

வயிறுப்பிக் கிறுகிறுத்தே ஏப்பமாகும்
வெடிக்குமயிர் கால்தோறும் வியர்வையாகும்
மிகப்பொருமி வயிறுகழிந் திரைச்சலாகும்
எடுக்குமே குடலிளைக்கு மிறங்கா தன்னம்
எரியுமே யுடலெங்கு மிருமலாமே“.

- யூகிவைத்தியசிந்தாமணி

1. Burning sensation in the stomach
2. Borborygmus
3. Excessive salivation
4. Headache
5. Giddiness
6. Belching
7. Perspiration
8. Diarrhoea
9. Emaciation
10. Loathing of food
11. Burning sensation all over the body
12. Cough

2. SILETHUMA KUNMAM:

“உண்டாகும் வாய்நீர்தானிளைப்புண்டாகும்

உடல்வற்றி கருத்தழியு முரத்திரைக்கும்

வெண்டாகும் பெலன்கெடுக்கு மசனந் தள்ளும்

மிக்கான தலையரிக்கும் வெளிரு மேனி

தெண்டாகு நெஞ்சதனிற் புகைச்ச லுண்டாம்

திடுக்கிட்டு நடுக்கலுமாந் தேகந்தானும்

திண்டாகுந் தலையெங்கும் பார மாகும்

சிலேட்டுமமாங் குன்மமென்றே செப்பலாமே”.

- யூகிவைத்தியசிந்தாமணி
-

1. Excessive salivation
2. Emaciation
3. General weakness
4. Loathing of food
5. Generalised Tremor
6. Heaviness of head
7. Pallor of the skin
8. Dyspnoea
9. Heart burn sensation

3. PITHAKUNMAM:

“நோம்பித்த குன்மத்தி நுட்பங் கேளாய்

நுனிமஞ்ச ணிறம்போல முகமு மாகும்

வாஞ்சத்தி வாந்தியுண்டாய் மனமறுக்கும்

மயக்கமாய் நெஞ்சதனிற் கோழை கட்டும்

காமநெருப்பாய்த் தானிருக்குங் கைகாலோயும்

கடுவெய்யிற் கண்டவுடன் றலைசு ழற்றும்

மூத்திரஞ் சிவந்திருக்குந் தாகங் காணும்

முக்கியே மலம்வீழும் மூச்சுண் டாமே”.

- யூகிவைத்தியசிந்தாமணி

1. Yellowish discolouration of face
2. Nausea and Vomiting
3. Reeling of head
4. Phlegm in the chest
5. Thirst
6. Haematuria
7. Constipation
8. Excessive body heat
9. Weariness of limb
10. Fainting
11. Dyspnoea

TREATMENT:

Siddhars have designed line of treatment into 3 phases for all disease, they are given below

1. **Kaappu (Prevention)**
2. **Neekam (Treatment)**
3. **Niraivu (Restoration)**

"நோய்நாடி நோய்முதல் நாடி அது தணிக்கும்

வாய்நாடி வாய்ப்பச் செயல்"

– திருக்குறள்

LINE OF TREATMENT:

- **Purgation**
- **Internal medicine**
- **Dietary advice**

Purgation:

"விரேசனத்தால் வாதம் தாழும்" **-**

"அறிந்திடும் வாதம் அடங்கு மலத்தினில்"

- திருமூலர்

Here Vaayu Kunmam, vatha humour is mainly deranged. Administration of purgatives is done to normalize the vitiated vaatham and eliminate other toxic products of digestion, metabolism and catabolism.

Purgative medicine:

Agasthiyar kuzhumbu-130 mg (Ref: Siddha vaithya thirattu) with 15 ml ginger juice at early morning on the first day of treatment.

INTERNAL MEDICINE:

Vediyuppu kattu - 800mg

with

Thiru kadugu Chooranam – 400mg

With Butter milk, after food twice daily.

Dietary advice:

Restricted diet:

1. **As per saint Yugi:**

   Excessive intake of food having Thuvarppu taste

   Milagu vagai uraippu (excessive intake of spicy diet)

   Kilanguvagaigal (Tuberous diet)

2. **As per literature Noigalukku Siddha parikaram:**

   Kollu, ulunthu, maamisam, sea foods like fish, dry fish…

DO'S:

- Butter milk is also recommended as one of the best home remedy for the treatment of gastric ulcer.
- Coconut water is considered as one of the best health drink. It keeps the body temperature cool, helps indigestion.
- Patient suffering from gastric ulcer should drink plenty of water (8-10 glasses of water/day).
- Having a small meal every 3 hours is recommended.
- Honey is also considered as an effective home remedy for the treatment of gastric ulcer.
- Foods to include: Leafy vegetables, carrot juice, fresh fruits, vegetable salads.

DON'TS:

- ❖ Alcohol, black pepper, chilli powder should be avoided.
- ❖ Tea, coffee, chocolate should not be taken.
- ❖ Do not eat full stomach

Prevention:

- ❖ Eat slowly by chewing the food thoroughly; this will help in proper digestion and prevention of gastric ulcer.
- ❖ Do not eat full stomach.
- ❖ Having a small meal every 3 hours is recommended.
- ❖ Avoid spicy foods.
- ❖ Avoid stress
- ❖ A proper diet for gastric ulcer combined with stress managing methods and life style changes can help in preventing gastric ulcer.

Niraivu (restoration):

Yogam techniques to be observed by the Vaayu Kunmam patients:

- Kiriya Gnayiru Vanakkam (Kiraiya Pose of Sun Salutation)
- Meditative postures
    - Thamarai Asanam (Padmasanam)
    - Mandi Uruthi Asanam (Vajrasanam)
- Paranayamams
    - Mathrika Pranayamam
    - Omkhara Pranayamam
    - Nithirai Pranayamam
- Shanthi Asanam (Savasanam)

DIGESTIVE SYSTEM

ABDOMEN

The abdominal cavity is an extensive space which extends upwards, deep to the costal margin, into the concavity of the diaphragm; and projects downwards and backwards into the bony pelvis as the pelvic cavity.

NINE REGIONS OF THE ABDOMEN

For the purpose of describing the location of viscera, the abdomen is divided into nine regions by four imaginary planes, two horizontal and two vertical. The horizontal planes are transplloric and trans tubercular planes. The vertical planes are the right lateral and lelt lateral planes.

STOMACH

The stomach is a muscular bag forming the widest and most distensible part of the digestive tube, it is connected above to the lower end of the oesophagus and below to the duodenum.

LOCATION:

The stomach lies obliquely in the upper and left part of the abdomen, occupying the epigastric, umbilical and hypochondriac regions.

SIZE:

The stomach is about 25cm long and is 6 inches (15.2 cm) wide at its widest part.

SHAPE AND POSITION:

The shape of the stomach depends upon the degree of its distension and that of the surrounding viscera.

When empty, the stomach is somewhat J-shaped (vertical).

When partially distended it become pyrifom in shape.

CAPACITY:

- At birth - 30 ml
- Puberty - 1000 ml
- Adults - 1500 – 2000 ml

ANATOMY OF THE STOMACH

The stomach has two orifices, two curvature, and two surfaces

ORIFICE:

Cardiac orifice: The cardiac orifice is joined by the lower end of the oesophagus.

Pyloric orifice: The pyloric orifice opens into the duodenum.

CURVATURES:

Lesser curvature: The lesser curvature is concave and forms the right border of the stomach.

Greater curvature: The greater curvature is convex and forms the left border of the stomach.

SURFACES:

The **Anterior** or Antero superior surface faces forwards and upwards.

The **Posterior** or Postero inferior surface faces backwards and downwards.

PARTS OF STOMACH:

The stomach is divided in to two parts

1. Cardiac part:

- This is upper opening of the stomach.
- Cardiac part is further subdivided in to the fundus, body.

2. Pyloricpart:

- This is lower opening of the stomach.
- Pyloric part is subdivided in to the antrum, pyloric canal.

Fundus:

Fundus is the portion above the horizontal line drawn across the oesophago-gastric junction.

It is commonly distended with gas which is seen clearly in radiographic examination under the left dome of diaphragm.

Body of the stomach:

It lies between the fundus and the pyloric antrum.

STRUCTURE OF WALL OF THE STOMACH

The wall of the stomach has four layers.

Outer serous layer: It consists of the peritoneal covering.

Muscular coat: This consists of three layers of smooth muscles fibers namely, inner oblique, middle circular and longitudinal layer.

Sub mucosa layer: It is made of connective tissue, arterioles and nerve plexus.

Inner mucosa layer: The glands of the stomach are situated in the mucous membrane. The gastric glands are mainly mucous secreting.

The glands of the fundus and most part of the body contain three types of cells

a. The mucous neck cells
b. The chief cells or zymogenic or peptic cells
c. The parietal cells or oxyntic cells

The glands of pyloric region mainly produce mucous and alkali.

Arterial supply:

Right gastric artery

Left gastric artery

Right gastroepiploic artery

Left gastroepiploic artery

Short gastric arteries

Venous supply:

Right gastric vein

Left gastric vein

Right gastroepiploic vein

Left gastroepiploic vein

Short gastric vein

NERVE SUPPLY:

Stomach is supplied by both parasympathetic and sympathetic nerves.

Sympathetic:

Greater splanchnic nerve

Parasympathetic:

Right vagus and Left vagus.

STOMACH FUNCTIONS:

1. Storage function: It is a reservoir for food.
2. Absorption: It has limited power of absorption.Substances like water, alcohol and drugs acetylsalicylic acid etc.are absorbed from the stomach.
3. Digestive function: Secretion of gastric juice.
4. Haematinic function: Secretion of intrinsic factor (glycoprotein) which is necessary for the absorption of vitamin B_{12}.

GLANDS OF STOMACH:

The glands of the stomach or gastric glands are divided in to three types

1. Fundic glands:

The different cells of these glands are,

a) Chief cells or pepsinogen cells: These cells secrete pepsinogen, rennin and gelatinase.
b) Parietal cells or oxyntic cells: These secrete HCL and intrinsic factor of castle.
c) Mucous neck cells which secrete mucin.

2. Pyloric glands:

These glands secrete mostly mucin and gastrin.

3. Cardiac glands:

These glands secrete alkaline mucus and small quantity of pepsinogen.

GASTRIC JUICE

Gastric juice is the mixture of secretions from different glands of the stomach.

Composition:

Gastric juice contains 99.5% water and 0.5% solids

Organicsubstances of gastric juice:

1. **Gastric enzymes**:

Pepsin, rennin, gastric lipase and othe enzymes.

2. **Gastric mucus:**

Mucus is a glycoproptein it is like a flexible gel covering the gastric mucus membrane

3. **Intrinsic factor:**

This is necessary for absorption of the extrinsic factor (old name for vitamin B12).

Inorganic substances of gastric juice:

Hcl, Sodium, Calcium, Potassium, Chloride, Bicarbonate, Phosphate

SECRETION OF HCL

Hcl secretion is an active process taking place in the canaliculi of parietal cells in fundic glands of stomach.

Factors regulating the secretion of Hcl

1. Gastrin:

i. Gastrin is one of the gastrointestinal hormones
ii. It stimulates acid secretion

2. Enterogastrone:

i. Enterogastrone is another gastrointestinal hormone

ii. It inhibits the acid secretion

3. Histamine:

i. It is an excitatory neurotransmitter sunstance secreted in spinal cord.
ii. It stimulates the acid secretion

4.**Vagal stimulation:**

Increases acid secretion

REGULATION OF GASTRIC SECRETION

Secretion of gastric juice occurs when the food is taken in the mouth. The neural and hormonal mechanism is involved in the secretion of gastric juice. The secretion occurs in three phases

1.Cephalic phase	:	This phase is under nervous control.
2.Gastric phase	:	This phase is under nervous and hormonal control.
3.Intestinal phase	:	when the chyme leaves the stomach and enters the intestine, initially the secretion of gastric juice is increased and later it is inhibited.

GASTRITIS

Definition:

Gastritis is an inflammation or irritation of the lining of the stomach, is not a single disease. The term gastritis should be reserved for histologically documented inflammation of the gastric mucosa. Gastritis is not the mucosal erythema seen during endoscopy and is not interchangeable with "dyspepsia."

The etiologic factors leading to gastritis are broad and heterogeneous. Gastritis has been classified based on time course (acute vs. chronic), histologic features, and anatomical distribution or proposed pathogenic mechanism.

Classification of Gastritis

I. Acute gastritis

A. Acute H. pylori infection

B. Other acute infectious gastritis

a. Bacterial (other than H. pylori)
b. Helicobacter helmanni
c. Phlegmonous
d. Mycobacterial
e. Syphilitic
f. Viral
g. Parasitic
h. Fungal

II. Chronic atrophic gastritis

A. Type A: Autoimmune, body- predominant
B. Type B: H. pylori–related, antral-predominant
C. Indeterminant

III. Uncommon forms of gastritis

A. Lymphocytic
B. Eosinophilic
C. Crohn's disease
D. Sarcoidosis
E. Isolated granulomatous gastritis

Incidence:

Sex : No sexual predilection

Age : Gastritis affects all age groups

ACUTE GASTRITIS

Acute gastritis is a term covering a broad spectrum of entities that induce inflammatory changes in the gastric mucosa. The different etiologies share the same general clinical presentation. However, they differ in their unique histologic characteristics. The inflammation may involve the entire stomach (eg, pangastritis) or a region of the stomach (eg, antral gastritis). Acute gastritis can be broken down into two categories: erosive (eg, superficial erosions, deep erosions, hemorrhagic erosions) and nonerosive (generally caused by *Helicobacter pylori*).

The bacteria Helicobacter pylori accounts for 90% of cases of acute gastritis. If not treated, this picture will evolve into one of chronic gastritis. Hypochlorhydria lasting for up to one year may follow acute H. pylori infection.

No correlation exists between microscopic inflammation (histologic gastritis) and the presence of gastric symptoms (eg, abdominal pain, nausea, vomiting). In fact, most patients with histologic evidence of acute gastritis (inflammation) are asymptomatic. The diagnosis is usually obtained during endoscopy performed for other reasons. Acute gastritis may present with an array of symptoms, the most common being nondescript epigastric discomfort.

Other symptoms include nausea, vomiting, loss of appetite, belching, and bloating. Occasionally, acute abdominal pain can be a presenting symptom. The diagnosis of acute gastritis may be suspected from the patient's history and can be confirmed histologically by biopsy specimens taken at endoscopy.

Pathophysiology

Acute gastritis has a number of causes, including certain drugs; alcohol; bile; ischemia; bacterial, viral, and fungal infections; acute stress (shock); radiation; allergy and food poisoning; and direct trauma. The common mechanism of injury is an imbalance between the aggressive and the defensive factors that maintain the integrity of the gastric lining (mucosa).

Causes for acute gastritis

1 .Diet and personal habits:

- Highly spiced food
- Excessive alcohol consumption
- Malnutrition
- Heavy smoking

2. Infections:

- **Bacterial infections** e.g *H.Pylori,* H.heilmanii, streptococci, staphylococci, Proteus species, Clostridium species, Escherichia coli, Diphtheria, Salmonellosis and pneumonia,
- **Viral infections**, e.g Cytomegalovirus (CMV), viral hepatitis, influenza, infectious mononucleosis.
- **Fungal (yeast) infections –** eg Candida albicans, Histoplasmosis and Gastric phycomycosis.
- **Parasites and worms -** Anisakidosis

3. Drugs:

Intake of drugs like Non steroidal anti-inflammatory drugs (NSAIDs), asprin, indomethacin cortisone, preparation of iron and chemotherapeutic agents.

4. Chemical and physical agent:

Intake of Corrosive chemicals such as caustic soda, phenol, Lysol.

Gastric irradiation.

5. Severe stress:

Emotional factors like shock, anger, etc.

Trauma and Surgery

Extensive burns.

6. Bile:

The reflux of bile (an alkaline medium important for the activation of digestive enzymes in the small intestine) from the small intestine to the stomach can induce gastritis.

CHRONIC GASTRITIS

Chronic gastritis is a histopathologic entity characterized by chronic inflammation of the stomach mucosa. Gastritis can be classified on the basis of the underlying cause (eg, *Helicobacter pylori,* bile reflux, nonsteroidal anti-inflammatory drugs [NSAIDs], autoimmunity, or allergic response) and the histopathologic pattern, which may suggest the cause and the likely clinical course (eg, *H pylori* –associated multifocal atrophic gastritis).

Etiology

Chronic gastritis may be caused by either infectious or noninfectious conditions. **Infectious forms of gastritis include the following:**

- Chronic gastritis caused by H pylori infection – This is the most common cause of chronic gastritis
- Gastritis caused by Helicobacter heilmannii infection
- Granulomatous gastritis associated with gastric infections in mycobacteriosis, syphilis, histoplasmosis, mucormycosis, South American blastomycosis, anisakiasis, or anisakidosis
- Chronic gastritis associated with parasitic infections -Strongyloides species, schistosomiasis, or Diphyllobothrium latum
- Gastritis caused by viral (eg, CMV or herpesvirus) infection

Noninfectious forms of gastritis include the following:

- Autoimmune gastritis
- Chemical gastropathy, usually related to chronic bile reflux or NSAID and aspirin intake
- Uremic gastropathy
- Chronic noninfectious granulomatous gastritis – This may be associated with Crohn disease, sarcoidosis, Wegener granulomatosis, foreign bodies, cocaine use, isolated granulomatous gastritis, chronic granulomatous disease of childhood,

eosinophilic granuloma, allergic granulomatosis and vasculitis, plasma cell granulomas, rheumatoid nodules, tumoral amyloidosis and granulomas associated with gastric carcinoma, gastric lymphoma, or Langerhans cell histiocytosis

- Lymphocytic gastritis, including gastritis associated with celiac disease (also called collagenous gastritis)
- Eosinophilic gastritis
- Radiation injury to the stomach
- Graft-versus-host disease (GVHD)
- Ischemic gastritis
- Gastritis secondary to drug therapy

Chronic gastritis:

Older people tend to suffer more frequently with chronic gastritis. Chronic gastritis involves the long-term inflammation of the mucosal lining of the stomach. This inflammatory condition of the upper digestive system can last for years. There are many possible causes, though in 90% of all patients who suffer with chronic gastritis the Helicobacter pylori bacteria is the primary culprit.

Type A gastritis: (autoimmune gastritis)

Type A gastritis involves mainly the body-fundic mucosa. It is also called auto immune gastritis due to the presence of circulating antibodies and is sometimes associated with other auto immune diseases such as Hashimoto's thyroiditis and Addison's disease.

As a result of the antibodies against parietal cells and intrinsic factor, there is depletion of parietal cells and impaired secretion of intrinsic factor, these changes may lead to significant gastric atrophy where intestinal metaplasia may occur, and a small proportion of these patients may develop pernicious anemia. Due to to depletion of gastric acid-producing mucosal area, there is hypo-or achlorhydria, and hyperplasia of gastrin-producing G cells in the antrum resulting in hyper gastrinaemia.

Type B: (H.pylori-related)

TypeB gastritis involves the region of antral mucosa and is more common. It is also called hypersecretory gastritis due to excessive secretion of acid, commonly due to infection with H.pylori. These patients may have associated peptic ulcer.

Type AB: (Environmental gastritis, Chronic atrophic gastritis)

Type AB gastritis affects the mucosal region of A as well as B types. This is the most common type of gastritis in all groups. It is also called environmental gastritis because a number of as yet unidentified environmental factors have been implicated in its etio-pathogenesis.

Chronic atrophic gastritis is also used synonymously with type AB gastritis because in advanced stage, there is progression from chronic superficial gastritis to chronic atrophic gastritis, characterized by mucosal atrophy and metaplasia of intestinal or pseudopyloric type.

Sydney system of recording of Histologic changes in gastritis is more acceptable since it takes into account following multiple parameters:

i. Etiology (H.pylori, autoimmune, NSAIDs, infections)
ii. Location (Pangastritis, Predominant antral, predominant body-fundic)
iii. Morphology (depth of inflammation-superficialor deep, severity of inflammation, type of inflammation, atrophy, metaplasia).
iv. Somespecialfeatures (e.Granulomas,Eosinophilicgastritis,Erosions,Necrosis,Haemorrhages).

CLINICAL FEATURES:

1. Pain in the abdomen:

i.	Onset	:	Sudden
ii.	Location	:	Epigastric area of the abdomen
iii.	Radiation	:	Gastritis pain occurs in the left upper portion of the abdomen and in the back. The pain seems to "go right straight through" a person as it travels from the belly to the back.
iv.	Nature of pain	:	People often use the terms burning, aching, gnawing, or sore to describe the pain. Usually, a vague sense of discomfort is present, but the pain may be sharp, stabbing or cutting.

2. **Other symptoms of gastritis include the following:**

Belching

Nausea and vomiting

Bloating

Feeling of fullness or burning in the upper part of the belly

PROGNOSIS

The prognosis of chronic gastritis is strongly related to the underlying cause. Chronic gastritis as a primary disease, such as H pylori- associated chronic gastritis, may progress as an asymptomatic disease in some patients, whereas other patients may report dyspeptic symptoms. The clinical course may be worsened when patients develop any of the possible complications of H pylori infection, such as peptic ulcer or gastric malignancy.

H pylori gastritis is the most frequent cause of MALT lymphoma. Patients with chronic atrophic gastritis may have a 12- to 16-fold increased risk of developing gastric

carcinoma, compared with the general population. Approximately 1 in 6 infected persons develop peptic ulcer, and, in the United States, approximately 25% develop hypochlorhydria or achlorhydria. The lifetime risk of gastric cancer is in the range of 1-3%.

Eradication of H pylori results in rapid curing of the infection with disappearance of the neutrophilic infiltration of the gastric mucosa. Disappearance of the lymphoid component of gastritis might take several months after treatment. Data on the evolution of atrophic gastritis after eradication of H pylori have been conflicting. Follow-up for as long as several years after H pylori eradication has not demonstrated regression of gastric atrophy in most studies, whereas others report improvement in the extent of atrophy and intestinal metaplasia.

Another important question is whether H pylori eradication in a patient with atrophic gastritis reduces the risk of gastric cancer development. Limited data are available, but a prospective study in a Japanese population reported that H pylori eradication in patients with endoscopically resected early gastric cancer resulted in the decreased appearance of new early cancers, whereas intestinal-type gastric cancers developed in the control group without H pylori eradication.

These findings support an intervention approach with eradication of H pylori if the organisms are detected in patients with atrophic gastritis; the goal is to prevent the development of gastric cancer.

In patients with autoimmune gastritis, the major effects are consequent to the loss of parietal and chief cells and include achlorhydria, hypergastrinemia, loss of pepsin and pepsinogen, anemia, and an increased risk of gastric neoplasms. Autoimmune gastritis represents the most frequent cause of pernicious anemia in temperate climates. The risk of gastric adenocarcinoma appears to be at least 2.9 times higher in patients with pernicious anemia than in the general population.

Laboratory Studies

A number of laboratory tests are usually ordered.

- CBC count to assess for anemia, as acute gastritis can cause gastrointestinal bleeding
- Liver and kidney function tests
- Gallbladder and pancreatic function tests
- Pregnancy test
- Stool for blood

Special investigation:

During the endoscopy, a thin, flexible probe with a tiny camera on the end is sent into your stomach for a direct look.

At the same time, samples of stomach lining can be taken to test for a wide variety of conditions

Histologic Findings

Histologic examination of a biopsy specimen can help in establishing the etiologic agent of gastritis.

Other investigation:

Gallbladder and pancreas functions

H pylori tests:

Blood antibody test

Urea breath test

Stool antigen test

Differential Diagnosis:

Gastritis is often interpreted as primary, although it is frequently an expression of a more general disease. The following diseases present with gastric complaints and must always be considered in differential diagnosis.

1. General disease condition:

Any serious general disease can show symptoms indicating a stomach disease, such as nausea, belching, loss of appetite, and possibly vomiting.

2. Chronic uremia:

These symptoms are particularly frequent in chronic uremia.

3. Acute or chronic liver diseases:

Acute or chronic liver diseases (e. g., due to chronic alcohol abuse) are frequently accompanied by gastric complaints.

4. Congestive gastritis:

Congestive gastritis as a manifestation of cardiac insufficiency or portal hypertension must be considered in patients with cardiac or hepatic disease.

5. Digitalis gastritis:

Among drugs, “digitalis gastritis” in cardiac patients disappears a few days after stopping therapy.

6. Allergic gastritis:

Allergic gastritis, as a consequence of hypersensitive reactions to food, particularly milk, chocolate, yeast, nuts, citrus fruit, strawberries, shellfish, etc., occurs primarily as part of a generalized gastrointestinal reaction with diarrhea and pain, in some cases combined with systemic symptoms (e. g., tachycardia, drop in blood pressure, asthma, headache, urticaria).

Diagnosis:

Diagnosis of gastritis is made by examination (clinical symptoms, physical examination) habits and lifestyle, and the medications history along with endoscopy and biopsy findings.

Complications of Gastritis:

If gastritis isn't treated, it may lead to stomach ulcers and stomach bleeding. There are also some forms of chronic gastritis that may increase your risk of stomach cancer.

Other complications include:

- Gastrointestinal bleeding from an erosion or ulcer
- Gastric erosion
- Gastric outlet obstruction due to edema limiting the adequate transfer of food from the stomach to the small intestine
- Anemia
- Dehydration from vomiting
- Renal insufficiency as a result of dehydration
- Stomach perforation.

வெடியுப்புக்கட்டு

ஆதாரம்: யாகோபு வைத்திய சிந்தாமணி - 700

குன்மத்துக்கு வெடியுப்புக்கட்டு :

"சீனமோர் படிரெட்டி வெடியுப்பிட்டு
செறுசட்டி தன்னிலிட்டு அடுப்பில்வைத்து
மோனமாந் தீயெரிக்க உருகும்பாரு
முக்கியமாய்ச் சாய்த்தெடுத்து வைத்துத்துளாய்
ஞானமதாய்த் துட்டிடைதா நெடுத்துக்கேளு
நன்மைபெறத் திரிகடுகிற் றிரிநாளுண்ண
ஈனமுள்ள வாய்வுகுண்ம மெட்டுந்தீரும்
ஏகாந்த யாகோபு யிதஞ்சொன்னாரே"

- யாகோபு வைத்திய சிந்தாமணி - 700

செய்முறை:

ஒருபடி சீனம், இரண்டுபடி வெடியுப்பு ஒரு சிறிய சட்டியில் இட்டு அடுப்பில் வைத்து மெதுவாகத் தீயெரிக்க இரண்டும் சேர்த்து உருகும். சட்டியை இறக்கி சாய்த்து வைத்து குழம்பு ஆறிய பின் தூளானதை ஒரு காசெடை எடுத்துக்கொண்டு திரிகடுகுச் சூரணத்தில் உட்கொள்ள எட்டு வகைக் குன்ம ரோகங்களும் வாய்வும் நீங்கும்.

VEDIYUPPU (POTASSIUM NITRATE)

Vediyuppu occurs naturally as efflorescence on the soil. is mixed with water, boiled and egg white is added to remove its impurities and get purified.

பொதுகுணம்

“ மல்லாரு மட்டகுன்ம மாதருத ரக்கட்டி
கல்லா மதைப்புநீர்க் கட்டருக - லெல்லாமே
கம்பி கம்பி யென்றுங் கருவுண்டா மங்கிநின்ற
கம்பி கம்பி யென்றுரைக்குங் கால்“

“சூதக வாயுவொடு சோணிதத்தின் வாதமும் போம்
வாதவலி குன்மமிவை மாருங்காண் - மீதாங்
கொடிய வயிறிழியுங் காழைகப மேகும்
வெடியுப்புத் தன்னை விளம்பு“

- பதார்த்த குணசிந்தாமனி

Organoleptic charcters

Taste	:	Pungent
Potency	:	Hot
Division	:	Pungent
Action	:	demulcent, diuretic, and diaphoretic.
Medicinal uses	:	In the form of solution it is a refrigerant, efficient diuretic and disphoretic. It acts on the vascular system and reduces the pulse. As per the siddha text vediyuppu is used in the treating eight types of Gunmam, Utrine tumours,

SEENAM (ALUMINIUM POTASSIUM SULPHATE)

பொதுகுணம்

“ சீனமெனுங் காரமது சீறிவரு பல்லரணை
ஆனைக்கால் கண்ணோய் அனிலமொடு - மாநிலத்தில்
துன்மாங்கிசம்வாயு தோலாத உள்ளழலை
குன்மமிவை போக்குமெனக் கூறு“

- பதார்த்த குணசிந்தாமனி

Taste : sour, sweet and astringent.

Characters : Colourless, transparent crystals, with acid, sweetish astringent taste.

Action : Astringent, caustic, haemostatic, anti spasmodic and anti septic.
Irritant and purgative in large dose.
Emetic in repeated doses.

Medicinal uses: It is used in the treatment of Leucorrhea, Haematuria, Haemoptysis, Menorrhagia, Gastric and intestinal catarrh and other Haemorrhages.

In the form of lotion it is used internally to check Haemorrhage from stomach, lungs, kidneys and other organs.

CHUKKU

பொதுகுணம்

"சூலை மந்தம் நெஞ்செரிப்பு தோடமேப்பம் அழலை

மூலம் இரைப்பிருமல் மூக்கு நீர் - வாலகப

தோடமதி சாரந் தொடர்வாத குன்மநீர்த்

தோடம் ஆமம் போக்குஞ் சுக்கு"

- பதார்த்த குணசிந்தாமனி

Botanical name	:	Zingiber officinale, Roscoe.
Family	:	Zingiberaceae
Parts used	:	Scraped and Dried rhizome

Organoleptic charcters

Taste	:	Pungent
Potency	:	Hot
Division	:	Pungent
Action	:	Stimulant to the gastro intestinal tract, stomachic, carminative, aromatic, silagogue and digestive.
Constituents	:	Camphene, phellandrene, cineol, zingiberine, borneol, gingerol a yellow pungent body and an oleo resin Gingirin.
Medicinal uses	:	Dry ginger is much used as a carminative adjunct. It is extremely valuable in dyspepsia, flatulence, colic, cough, asthma, dyspepsia and indigestion. It is also used in nervous disorders, strengthens memory, removes obstruction in the vessels and restricts incontinence of urine. Dry ginger is generally used as a corrective adjunct to purgatives to prevent nausea and griping.

MILAGU

பொதுகுணம்

"சீதசுரம் பாண்டு சிலேத்துமங் கிராணிகுன்மம்

வாதம் அருசிபித்தம் மாமூலம்-ஓதுசன்னி

யாசம பஸ்மாரம் அடர்மேகம் காசமிவை

நாசங் கறிமிளகினால்"

- பதார்த்த குணசிந்தாமனி

Botanical name	:	Piper nigrum, Linn.
Family	:	Piperaceae
Parts used	:	Dried unripe fruit

Organoleptic charcters

Taste	:	Pungent, Bitter.
Potency	:	Hot
Division	:	Pungent
Action	:	Black pepper is acrid, pungent, hot, carminative, Stimulant, Anti periodic, Antidote and Anti pyretic.
Constituents	:	A volatile oil Piperine and Piperidin, a balsamic volatile essential oil, soluble pungent resin chavicine, starch,lignin, gum, fat, proteids and ash..
Medicinal uses	:	Black pepper is prescribed in cholera, dyspepsia, flatulence, diarrhea and various gastric ailments. It is also used in the treatment of piles, constipation, colic, gastric troubles, ascities, anemia, worms, asthma, etc. Black peper is also used in the treatment of venereal disease, tuberculosis and rheumatism.

THIPPILI

பொதுகுணம்

"இருமல் குன்மம் இரைப்பு கயப்பிணி

ஈளை பாண்டு சந்யாசம் அரோசகம்

பெருமாலைப் புரிமேகம் பிடகமும்

பேருந் திப்பிலிப் பேரங்குரைக்கவே"

- பதார்த்த குணசிந்தாமனி

Botanical name	:	Piper longum, Linn.
Family	:	Piperaceae
Parts used	:	Dried unripe fruit

Organoleptic charcters

Taste	:	Sweet
Potency	:	coolant
Division	:	Sweet
Action	:	Infusion is stimulant, carminative and alternative tonic. It acts also as an aphrodisiac, vermifuge**,** emmenagogue and diuretic.
Constituents	:	Resins, volatile oil, alkaloid Piperine, starch, gum, fatty oil and inorganic matter.
Medicinal uses	:	Old long pepper is more efficacious in medicine. It relives cough, cold, asthma, hoarseness and hiccup. Thippili is valuable alternative tonic in paraplegia, asthma, chronic bronchitis, chronic cough, enlargement of spleen and other abdominal viscera etc. It is also used in the treatment of anorexia, piles and rheumatism.

INGREDIENTS OF VEDIYUPPU KATTU

VEDIYUPPU

SEENAM

\

INGREDIENTS OF THIRIKADUGU CHOORANAM

CHUKKU

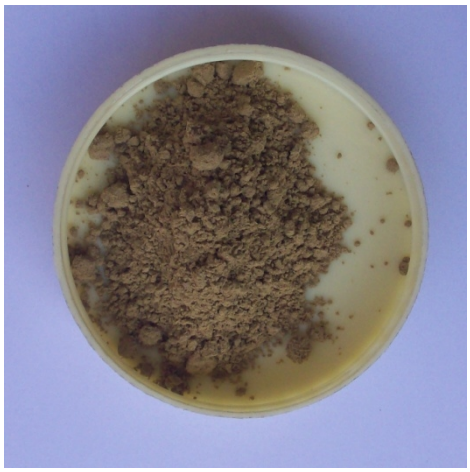
MILAGU

THIPILI

PREPARED MEDICINES

VEDIYUPPU KATTU

THIRIKADUGU CHOORANAM



STANDARD OPERATING PROCEDURE FOR VEDIYUPPU KATTU & THIRIKADUGU CHOORANAM

The required raw drugs were purchased from a well reputed country shop .The raw drugs were authenticated by the concerned Head of the Department, of NIS. The raw drugs were purified and the medicine was prepared in Gunapadam lab of NIS. The prepared medicine was again authenticated by the concerned Head of the department.

PREPERATION OF VEDIYUPPU KATTU

Required raw drugs:

1. Vediyuppu – Pottasium Nitrate
2. Seenam – Aluminium Potassium Sulphate

Purification of the raw drugs

1. VEDIYUPPU - Pottasium Nitrate

Pottasium Nitrate and water is mixed in the ratio of 1:4 taken in a pot and allowed to boil in mild flame. When the salt and water content is about to boil, add egg white in a ratio of 4 egg: 1400 grams of Potassium Nitrate salt. Now the impurities accumulated over the water surface are removed with the help of wooden spoon. When the salt water mixture is about to freezing transfer it into a separate mud pot and kept out of reach without aeration. The next day water content in the mixture is drained and the salt is dried under sunlight. The above said procedure is repeated for seven times to get the purified Potassium Nitrate salt.

2. SEENAM (Alum) - Aluminium Potassium Sulphate

The alum is dissolved in water, filtered, boiled when it attains the jelly consistency. It is allowed to cool to get it in a purified form.

Method of Preparation:

Two parts of purified Vediyuppu and one part of purified Seenam are powdered and mixed. This mixture is taken in an earthen vessel and heated in mild flame till it melts. This colloid mixture is then allowed to cool till it becomes hard. Then it is powdered well and stored in an air tight glass container.

PREPERATION OF THIRIKADUGU CHOORANAM

Required raw drugs:

1. Chukku (Dried Ginger) – *Zingiber officinale, Rosc*
2. Milagu (Black Pepper) – *Piper nigrum. Linn*
3. Thippili (Long Piper) - *Piper longum.Linn*

Purification of the raw drugs

1. **Chukku (Dried Ginger)- *Zingiber officinale, Rosc***
   Double the proportion of lime stone [calcium carbonate] solution is poured to the dried ginger and boiled for three hours, then wash it, dry and remove the peel.

2. **Milagu (Black Pepper) – *Piper nigrum. Linn***
   Soak it in sour butter milk for three hours then dry it in sunlight.

3. **Thippili (Long Piper) - *Piper longum, linn***
   Soak it in Plumbago zeylanica,Linn leaf juice for twenty four minutes(1 Nazhigai) and dry it in sunlight.

Method of Preparation:

Equal parts of purified Chukku, Milagu and Thippili are powdered separately and mixed thoroughly and stored in an air tight container.

DRUG STORAGE:

The drug thus prepared is stored in a clean and dry glass bottles.

DISPENSING:

The Prepared Medicine was dispensed in sachets.

DOSAGE:

Kaasu edai [800mg]
(Twice / day) after food.

VEHICLE:

Thirikadugu Chooranam

COURSE:

1 Mandalam [48 days]

STUDY DESIGN AND CONDUCT OF THE STUDY

STUDY TYPE	:	An Open Clinical Trial
STUDY PLACE	:	OPD and IPD of Ayothidasar Pandithar Hospital, National Institute of Siddha, Tambaram Sanatorium, Chennai-47.
STUDY PERIOD	:	12 Months.
SAMPLE SIZE	:	40 patients.
TRIAL DRUG	:	VEDIYUPPU KATTU
DOSAGE	:	Kaasu edai [800mg] (Twice / day) after food.
VEHICLE	:	Thirikadugu Chooranam
COURSE	:	1 Mandalam [48 days]

SUBJECT SELECTION:

As and when patients reporting at OPD of Ayothidasa Pandithar Hospital, National Institute of Siddha with clinical symptoms of Indigestion, Vomiting the residues of last food intake, Aversion to food, Flatulence, Fatigue, Generalized weakness, Sweating Gripping abdominal pain, Pricking pain of the chest were subjected to screening test & documented using screening proforma.

SELECTION CRITERIA

INCLUSION CRITERIA

- Age 20-55 of both sexes.
- Patient willing to undergo blood investigation and willing to be admitted in the hospital or attend the OPD once in 7 days.
- Patients with clinical symptoms of Indigestion, Vomiting the residues of last food intake, Aversion to food, Flatulence, Fatigue, Generalized weakness, Sweating Gripping abdominal pain, Pricking pain of the chest.
- Patient willing to sign the informed consent stating that he/she will conscientiously stick to the treatment during 48 days but can opt out of the trial of his/her own conscious discretion.

EXCLUSION CRITERIA

Patient's with a known

- History of Gastric Carcinoma
- History of complicated Peptic Ulcer
- History of Cardio vascular disease
- History of Liver disorders
- History of Worm infection
- Abnormal spinal curvature of thoracic vertebrae (kypho scoliosis)
- History of Diabetes mellitus
- History of Hyper tension
- Pregnancy
- Lactation
- History of Appendicitis
- History of pancreatitis

were excluded.

WITHDRAWAL CRITERIA

- Intolerance to the drug, and development of adverse reactions during the drug trial
- Severe abdominal pain
- Profuse vomiting and occurrence of Haematemesis.
- Incidence of diarrhea, dysentery
- Any other acute illness
- Poor patient compliance and defaulters
- Patients turned unwilling to continue in the course of clinical trial
- Any other unforeseen circumstances rendering the patient unable to continue in the trial were withdrawn from the study.

ASSESSMENTS AND INVESTIGATIONS:

A) Clinical assessment

Siddha assessment

B) Routine investigations

Modern parameters

Siddha parameters

C) Special investigations

A) CLINICAL ASSESSMENT:

- Indigestion
- Vomiting with residues of food intake lastly
- Aversion to food
- Griping epigastric pain
- Flatulence
- Fatigue
- Generalized weakness
- Sweating
- Excessive thirst
- Headache
- Loss of weight
- Regurgitation

SIDDHA ASSESSMENT

Ennvagaithervu (Eight types of Examination):

- Naadi
- Sparisam
- Naa
- Niram
- Mozhi
- Vizhi
- Malam
- Moothiram

B) ROUTINE INVESTIGATION

Modern Parameters:

BLOOD

- Hb (gm/dl) Total WBC Count(Cells/cumm) ,
- DC - (Polymorphs (%), Lymphocytes (%) Eosinophils (%), Monocytes (%), Basophils (%),
- Total RBC count (Million cells / cu mm),
- ESR (mm/hr)
- Blood glucose (mg/dl) (Fasting, Post Prandial or Random)

LIPID PROFILE

- Serum cholesterol (mg/dl), HDL cholesterol (mg/dl), LDL cholesterol (mg/dl)- VLDL cholesterol (mg/dl), Serum triglycerides (mg/dl).

KIDNEY FUNCTION TESTS

- Blood urea(mg/dl), Serum Creatinine (mg/dl)

LIVER FUNCTION TESTS

- Serum total bilirubin (mg/dl) , Serum Direct bilirubin (mg/dl) , Serum Indirect bilirubin (mg/dl), Serum Alkaline phosphate (u/l) , SGOT (u/l), SGPT (u/l), Serum Total Protein (g/dl) , Serum Albumin(g/dl), Serum Globulin(g/dl), Serum Calcium (mg/dl), Serum Phosphorous (mg/dl), Serum Uric Acid (mg/dl).

URINE

- Urine sugar (F)&(PP) or (R), Albumin, Deposits

MOTION

- Ova, Cyst, Occult blood.

Siddha parameters

Malam - Niram
Elakal / Erukal
Muraigal

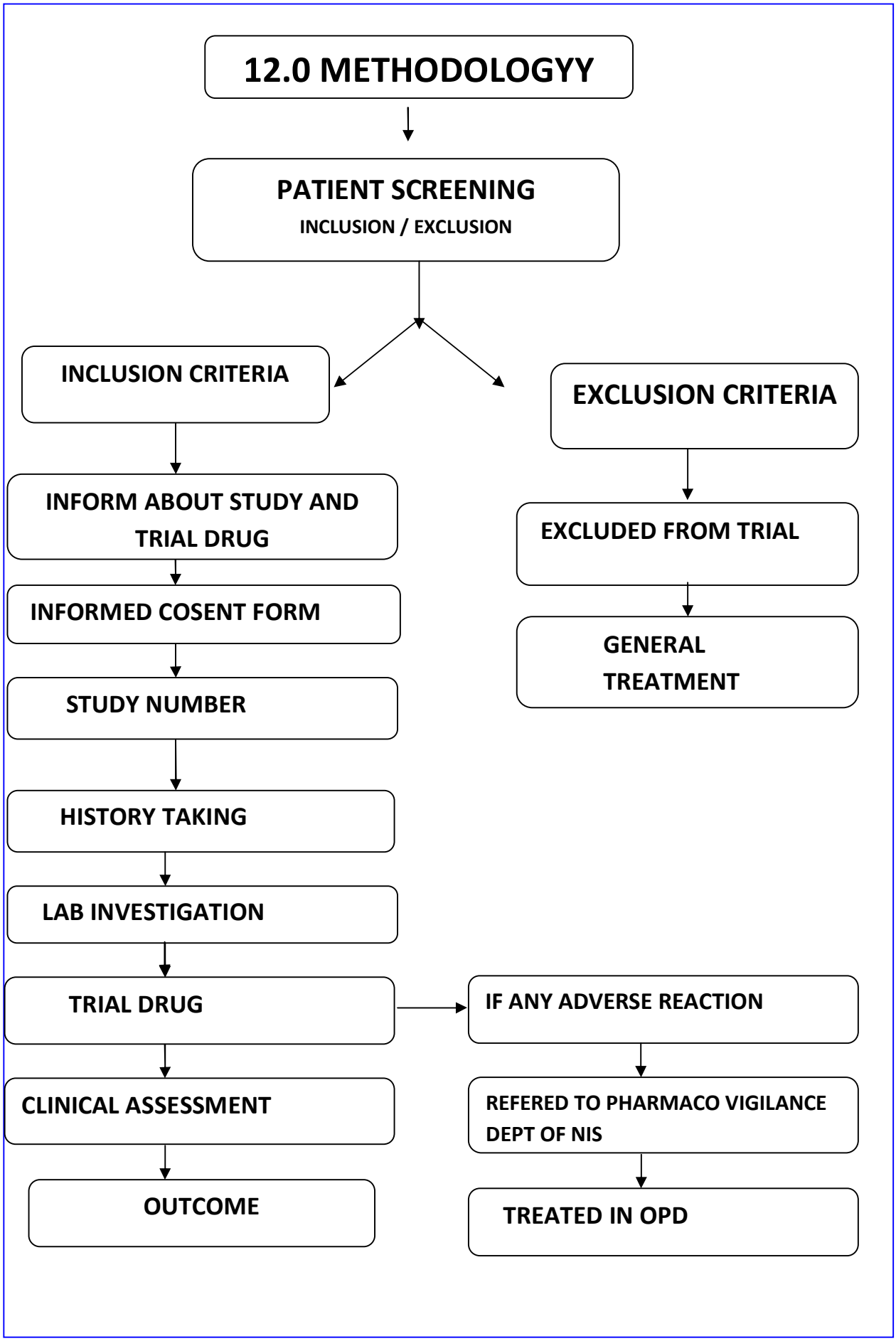
Moothiram

Neerkuri - Niram
Edai
Manam
Nurai
Enjal

Neikuri -

C) **SPECIAL INVESTGATIONS**

- **Endoscope**
- **USG - Abdomen**


12.0 METHODOLOGYY
PATIENT SCREENING
INCLUSION / EXCLUSION
INCLUSION CRITERIA
EXCLUSION CRITERIA
INFORM ABOUT STUDY AND TRIAL DRUG
INFORMED COSENT FORM
STUDY NUMBER
HISTORY TAKING
LAB INVESTIGATION
TRIAL DRUG
CLINICAL ASSESSMENT
OUTCOME
EXCLUDED FROM TRIAL
GENERAL TREATMENT
IF ANY ADVERSE REACTION
REFERED TO PHARMACO VIGILANCE DEPT OF NIS
TREATED IN OPD

STUDY ENROLLMENT

- In this Open Clinical Trial, patients reporting at the OPD with the clinical symptoms of Indigestion, Vomiting the residues of last food intake, Aversion to food, Flatulence, Fatigue, Generalized weakness, Sweating Gripping abdominal pain, Pricking pain of the chest etc., were examined clinically for enrolling in the study based on the inclusion and exclusion criteria.
- The patients enrolled were informed (Form IV) about the study, trial drug, possible outcomes and the objectives of the study in the language and terms understandable to them.
- After ascertaining the patient's willingness, informed consent was obtained in writing from them in the consent form (Form IV-A).
- All these patients will be given unique registration card in which patient's Registration number of the study, Address, Phone number and Doctors phone number etc. had be given, so as to report easily, if any complications arise.
- Complete clinical history, complaints and duration, examination findings-- all were recorded in the prescribed Proforma in the history and clinical assessment forms separately. Screening Form- I will be filled up; Form I-A,
  Form –II and Form –III were used for recording the patient's history, clinical examination of symptoms and signs and laboratory investigations respectively.
- Patients were advised to take the trial drug with appropriate dietary advice (Form IV-D).

CONDUCT OF THE STUDY:

As per Siddha literature, before starting the treatment for VAAYU KUNMAM, purgation was given with Agathiar kulambu 130 mg with palm jaggery 5gm, early morning, in empty stomach for one day.

The trial drug "VEDIYUPPU KATTU" was given with THIRIKADUGU Chooranam continuously for 48 days. OP patients visited the hospital once in 7 days. At each clinical visit clinical assessment was done and prognosis was noted. For IP patients the drug was provided daily and prognosis was noted. For IP patients, clinical assessments were carried out daily.

Laboratory investigations were done at 0^{th} day and 48^{th} day of the trial. For IP patients, who were not in a situation to stay in the hospital for a long time was advised to attend the OPD for further continuation of the treatment.

Patients with previous Endoscopic investigations were included and after completion of the treatment they were subjected to endoscopic evaluation and changes were noted.

After the 35^{th} day (6^{th} visit), a card containing Symptom tables were given to each patient. The patients were advised to mark a tally mark for each occurrence of symptoms during the last two weeks of the treatment (36^{th} – 48^{th} day). These data's were analyzed using symptom score according to vaezl, Grading and Staging in Gastroenterology, for outcome measurement.

During the course of the treatment, patient was advised not to take coffee, tea, curd, root tubers, sour and spicy foods, and advised to, take the diet as given in Form IV-D. After the end of the treatment also, the patient was advised to visit the OPD for another 2 months for follow-up. If any of the trial patients who fail to collect the trial drug on the prescribed day but wants to continue in the trial, from the next day or two was allowed, but defaulters of one week and more were excluded from the study.

DATA MANAGEMENT

- After enrolling the patient in the study, a separate file for each patient was opened and all forms were filed in the file. Study No. and Patient No. were entered on the top of file for easy identification. Whenever study patient visits OPD during the study period, necessary recordings were made at the assessment form or other suitable form of the respective patient's file.
- The screening forms were filed separately.
- The Data recordings were monitored for completion by Faculties, HOD and SRO (statistics). All collected data were entered in the computer using Microsoft Office software. Data entries were 100% cross checked manually.
- All forms were further scrutinized in presence of Investigator by Senior Research Officer (Statistics) for logical errors and incompleteness of data to avoid any bias. No modification in the results was permitted for unbiased reports.

OUT COME OF TREATMENT

Primary Outcome:

Primary Outcome was mainly assessed by reduction in the clinical symptoms of Gripping abdominal pain, Flatulence and Regurgitation assessed by Symptom score according to vaezl.

According to the score obtained by the patient before and after treatment they are categorized as Level I (0 – 5), Level II (6 – 10) and Level III (11 – 15).

Secondary Outcome:

Secondary outcome was assessed by comparing the following parameters, before and after the treatment.

1) Reduction in other clinical symptoms
2) Changes in Endoscopic study (5 Patients)

ADVERSE EFFECT / SERIOUS EFFECT MANAGEMENT

If the trial patient develops any adverse reaction, he/she will be referred to the pharmacovigilance department of NIS. The members of this department will assess the adverse event and recorded in the prescribed adverse reaction form. For any adverse effect the investigator will give the proper management in NIS OPD with free of cost.

ETHICAL ISSUES

1. Informed consent was obtained from the entire patient after explaining about the study in the understandable language to them.
2. After getting the consent of the patient (through consent form) only, they were enrolled in the study.
3. Treatment was provided free of cost.
4. While collecting blood sample from the patient, only disposable syringes, disposable gloves, with proper sterilization of lab equipments were used to prevent infections.
5. The data collected from the patient were kept confidential. The patient's were informed about the diagnosis, treatment and follow-up.
6. The patients excluded [as per the exclusion criteria] from the study were given proper treatment, with full care at NIS.

19.0 ASSESSMENT FORMS

Form – I Screening and Selection Proforma

Form – IA History Proforma on enrollment

Form - II Clinical Assessment on enrollment

Form - IIA Clinical Assessment during and after the trial

Form – III Laboratory investigations on enrollment during and after the trial.

Form - IV Information sheet

Form – IV A Consent form

Form - 1V-B Withdrawal form

Form - IV-C Drug Compliance form

Form – IV- D Dietary Advice form.

Form – IV-E Adverse Reaction form

Observations and Results are tabulated under the following headings,

1. Age incidence.
2. Sex distribution
3. Gunam
4. Body constitution
5. Paruva Kaalam
6. Nilam
7. Diet
8. Habit of Smoking and Alcohol
9. Occupation
10. Socio-economic status
11. Positive family history for the disease
12. Chronicity of illness
13. Derangement in Vatham.
14. Derangement in Pitham
15. Derangement in Kabam.
16. Gnanenthriyam.
17. Kanmenthiriyam
18. Kosangal
19. Udal thathukkal
20. .Envagai thervugal
    - 18.a. Naadi
    - 18.b.Naa
    - 18.c.Vizhi
    - 18.d. Malam
    - 18.e.Neikkuri
21. Clinical features
22. Blood Grouping
23. Statistical Analysis.
24. Lab investigations.

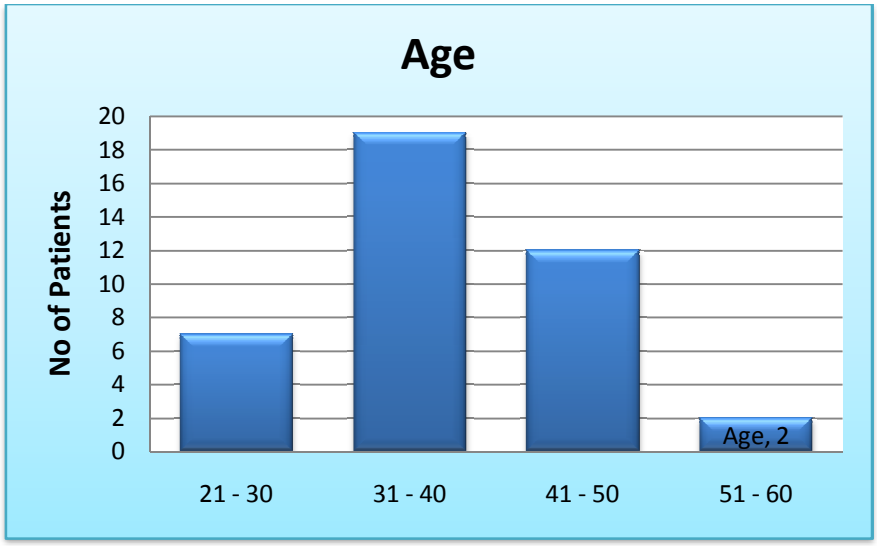
OBSERVATION AND RESULTS

1. AGE INCIDENCE:

Table: 1

AGE (YEAR)	NUMBER OF CASES	PERCENTAGE
21-30	7	17.5 %
31-40	**19**	**47.5 %**
41-50	**12**	**30 %**
51-60	2	5 %
Total	40	100 %

Fig:1



Observation:

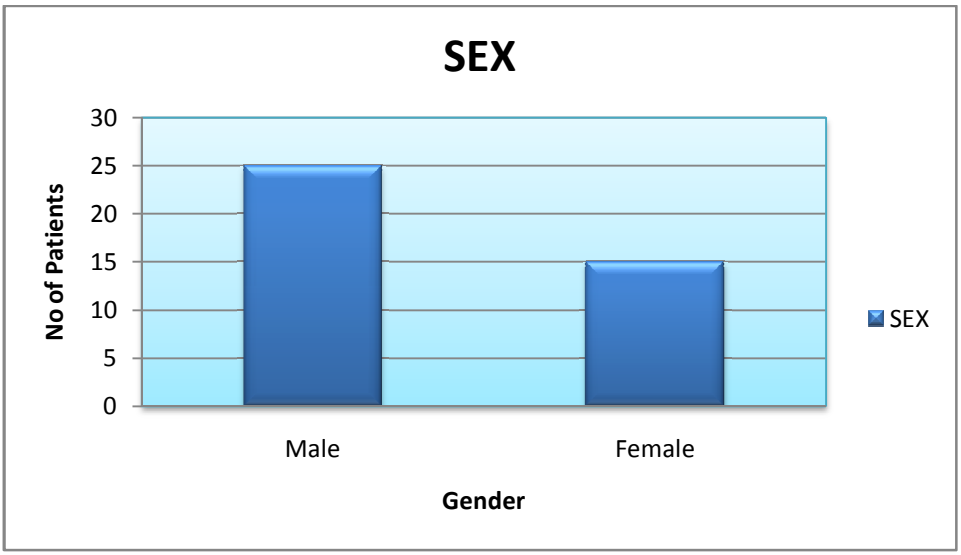
As per table 1 & fig 1: The prevalence of the disease was found to be higher in 19 cases (47.5 %) in the age group of 31 - 40 years, 12 cases (30%) in the age group of 41 - 50 years, 7 cases (17.5 %) in the age group of 21 - 30 years and 2 cases (5 %) in the age group of 51 - 60 years.

2. SEX DISTRIBUTION:

Table: 2

GENDER	NUMBER OF CASES	PERCENTAGE
Male	**25**	**62.5 %**
Female	15	37.5 %
Total	40	100%

Fig:2



Observation:

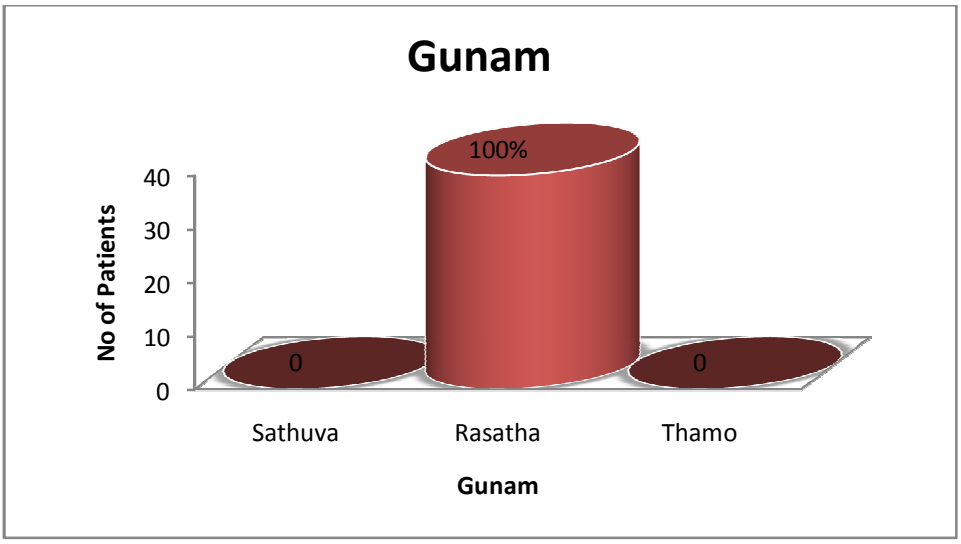
As per table 2 and fig 2, Among the 40 patients selected, prevalence of the disease was found to be higher in males i.e. 25 cases (62.5%) then the female cases of 15 (37.5%).

3. GUNAM

Table: 3

GUNAM	NUMBER OF CASES	PERCENTAGE
Sathuva gunam	0	0 %
Rasatha gunam	**40**	**100 %**
Thamo gunam	0	0 %
Total	40	100

Fig:3



Observation:

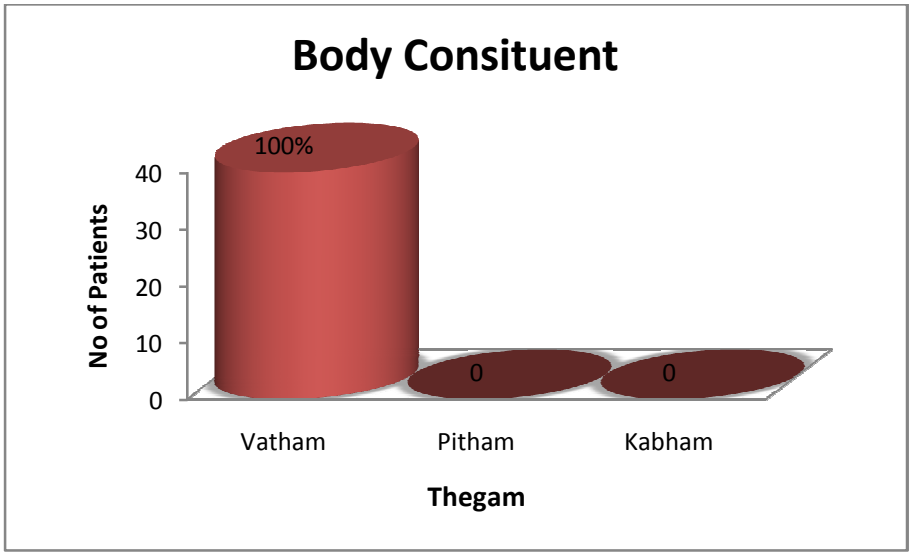
As per table 3 and fig 3: Among the 40 patients selected all were found to possess Rasatha gunam.

4. BODY CONSTITUTION:

Table 4:

S. NO	CONSTITUTION OF THE BODY	NO. OF CASES	PERCENT
1.	Vadha Thegi	40	100 %
2.	Pitha Thegi	Nil	Nil
3.	Kabha Thegi	Nil	Nil

Fig 4



Observation:

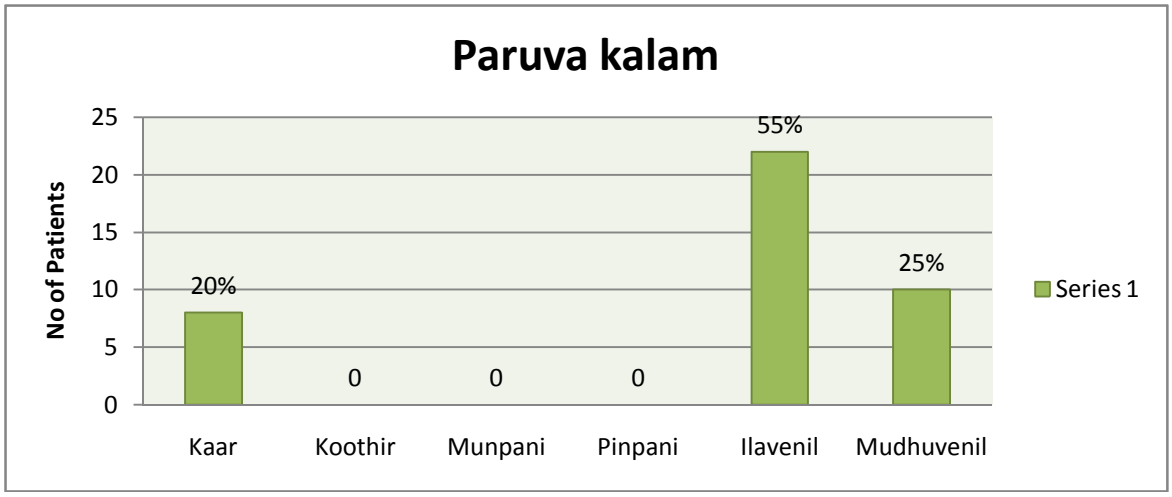
As per table 4 and fig 4: Among the 40 patients selected, all were found to be Vaatha thegi.

5. PARUVA KAALAM (SEASON)

Table: 5

PARUVA KAALAM	NUMBER OF CASES	PERCENTAGE
Kaar (Aug 16 – Oct 15)	8	20 %
Koothir (Oct 16 – Dec 15)	-	-
Munpani (Dec 16 – Feb 15)	-	-
Pinpani (Feb 16 – Apr 15)	-	-
Ilavenil (Apr 16 – Jun 15)	**22**	**55 %**
Mudhuvenil (Jun 16 –August 15)	10	25 %
Total	40	100

Fig 5



Observation:

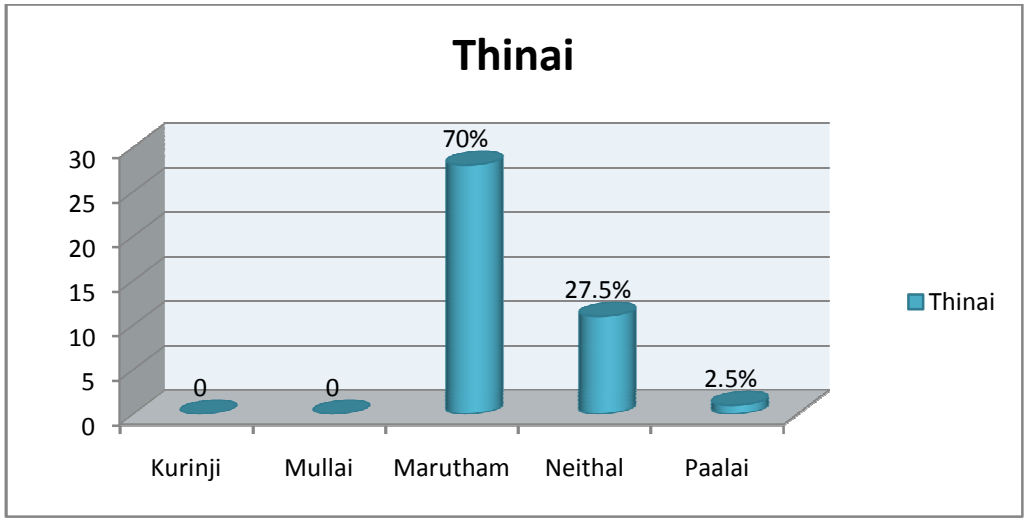
As per table 5 and fig 5: Among the 40 cases, in 22 cases (55%) the incidence of the disease seems to be higher in Ilavenil kaalam (Apr 16 – Jun 15) , 10 cases (25%) in Muthuvenilkaalam (Jun 16 – August 15) and 8 cases (20 %) in Kaar kaalam.

6. **THINAI:**

Table: 6

THINAI	NO OF PATIENTS	PERCENTAGE
Kurinji	Nil	Nil
Mullai	Nil	Nil
Marutham	**28**	**70 %**
Neithal	11	27.5%
Paalai	1	2.5%
Total	40	100%

FIG: 6



Observation:

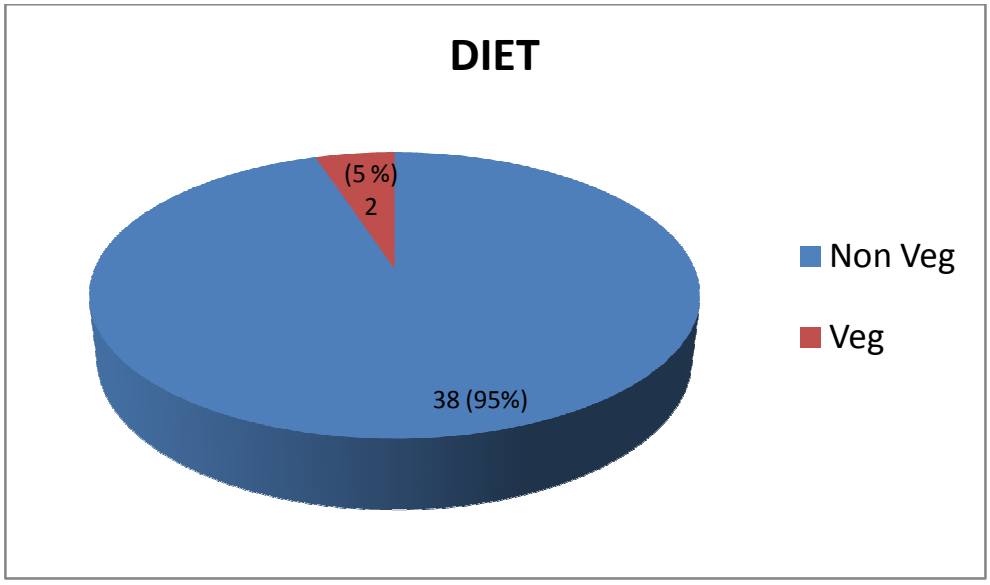
As per table 6: The incidence of the disease was more in 28 (70 %) cases reported in Marutham Thinai, 11 (27.5%) cases in Neithal thinai and only 1 (2.5%) case from Paalai Thinai.

7. DIET

Table: 7

DIET	NUMBER OF CASES	PERCENTAGE
Vegetarian	2	5 %
Non-Vegetarian	**38**	**95 %**
Total	40	100

FIG: 7



Observation:

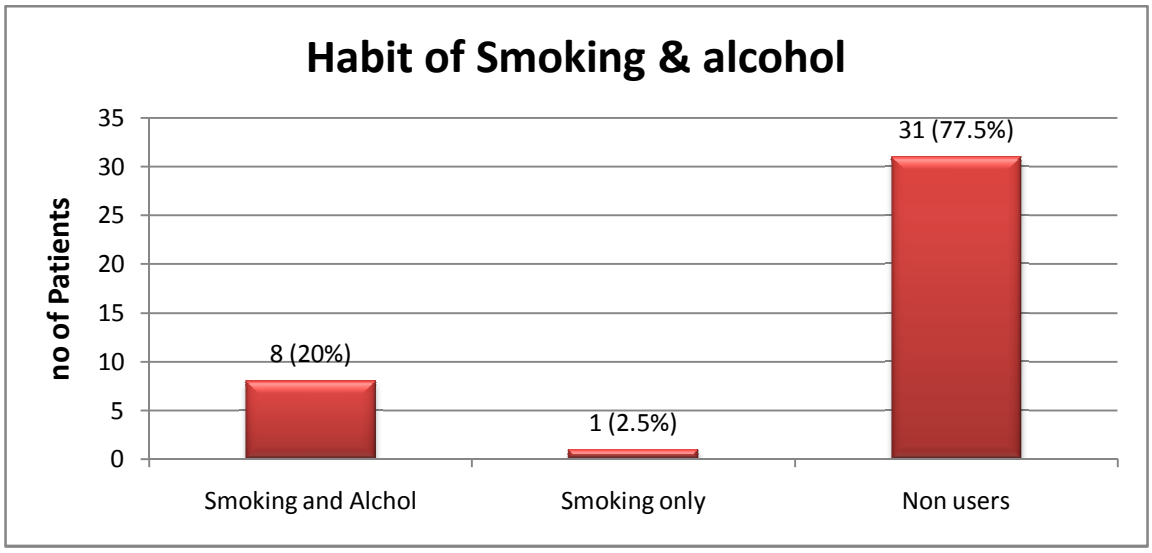
As per table 7 and fig 7: Among 40 cases the incidence of the disease was higher in 38 (95%) cases, who were non vegetarians and lower in vegetarians 2 cases (5%).

8. Habits of Smoking and Alcohol

Table: 8

Habit	NUMBER OF CASES	PERCENTAGE
Smoking and Alcohol	8	20 %
Smoking only	1	2.5 %
Non users	31	77.5
Total	40	100

Fig: 8



Observation:

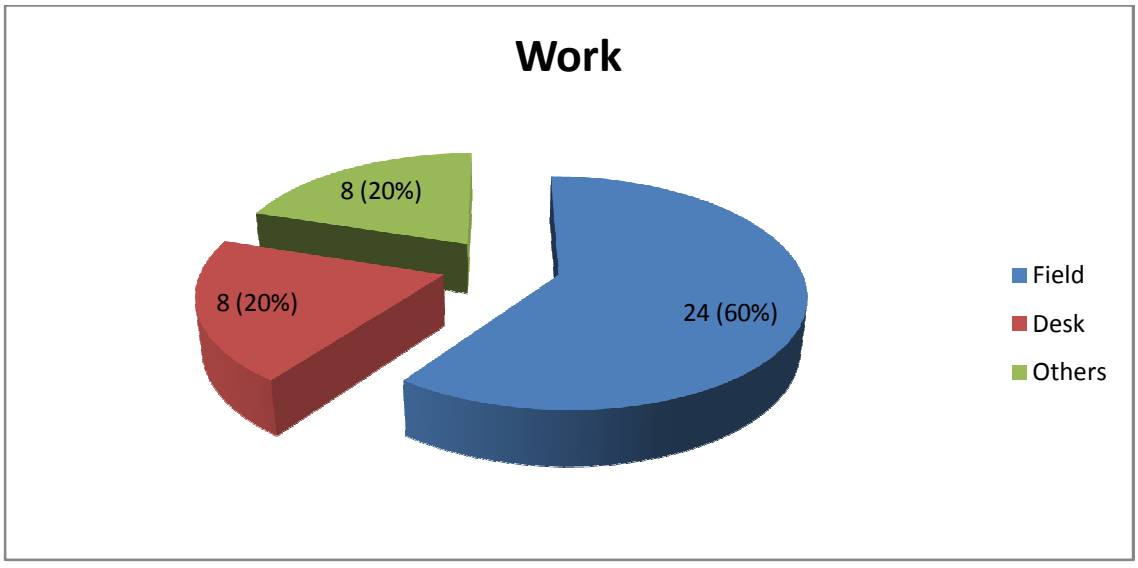
As per table 8 and fig 8: Among 40 cases the habit of consuming Smoking and Alcohol was found to be in 8 (20%) cases and only Smoking was found to be in 1 (2.5%). Remaining 31(77.5%) were non users of smoking and alchol.

9. OCCUPATION STATUS

Table: 9

OCCUPATION	NUMBER OF CASES	PERCENTAGE
Field Work	24	60 %
Desk work	8	20 %
Others	8	20 %
Total	40	100

FIG: 7



Observation:

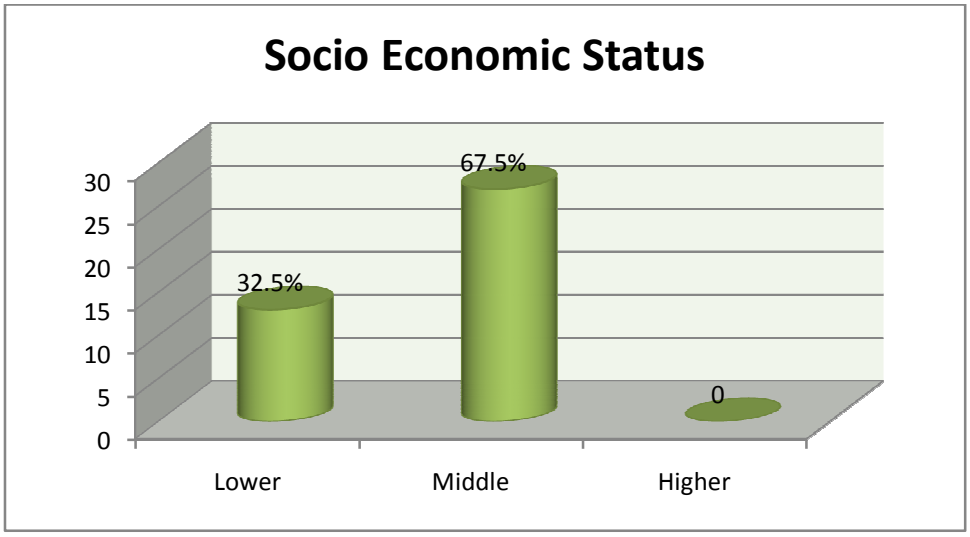
As per table 9 and fig 9: Among 40 cases, 24 cases(60%) were doing Field work, 8 cases (20%) were doing Desk work and 8 cases (20%) were found to be with other works.

10. SOCIO-ECONOMIC STATUS

Table: 10

SOCIO-ECONOMIC STATUS (In terms of Income status)	NUMBER OF CASES	PERCENTAGE
Lower	13	32.5 %
Middle	**27**	**67.5 %**
Higher	-	-
Total	40	100%

FIG: 10



Observation:

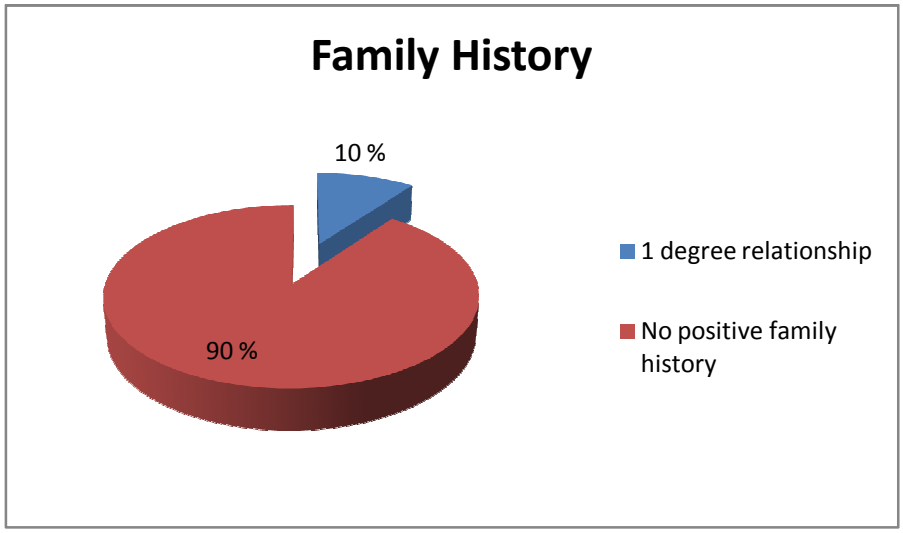
As per table 10 and Fig 10, the incidence of the disease was found to be higher in 27 (67.5 %) cases belonging to Middle class, lower in 13 (32.5 %) cases belonging to lower class.

11. POSITIVE FAMILY HISTORY FOR THE DISEASE

Table:11

FAMILY HISTORY FOR THE DISEASE	NO. OF CASES	PERCENTAGE
IN I DEGREE RELATIONSHIP	4	10 %
NO POSITIVE FAMILY HISTORY	36	90 %
Total	40	100%

FIG 11



Observation:

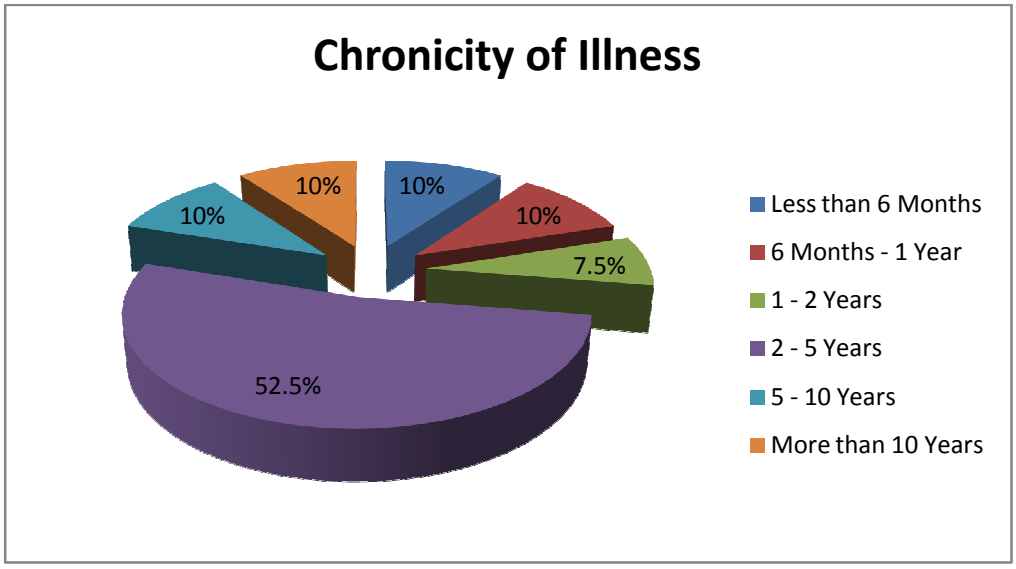
As per table 11 and Fig 11. Among the 40 cases, Positive familial history was seen in 4 (10 %) patients and no history of family involvement was found in 36 cases (90 %).

12. CHRONICITY OF ILLNESS AT THE TIME OF RECRUITMENT:

Table: 12

CHRONICITY OF ILLNESS	NO OF CASES	PERCENTAGE
Less than 6 months	4	10 %
Six months – 1 year	4	10 %
1 – 2 years	3	7.5 %
2-5 years	**21**	**52.5 %**
5-10 years	4	10 %
More than 10 years	4	10 %
Total	40	100

FIG:12



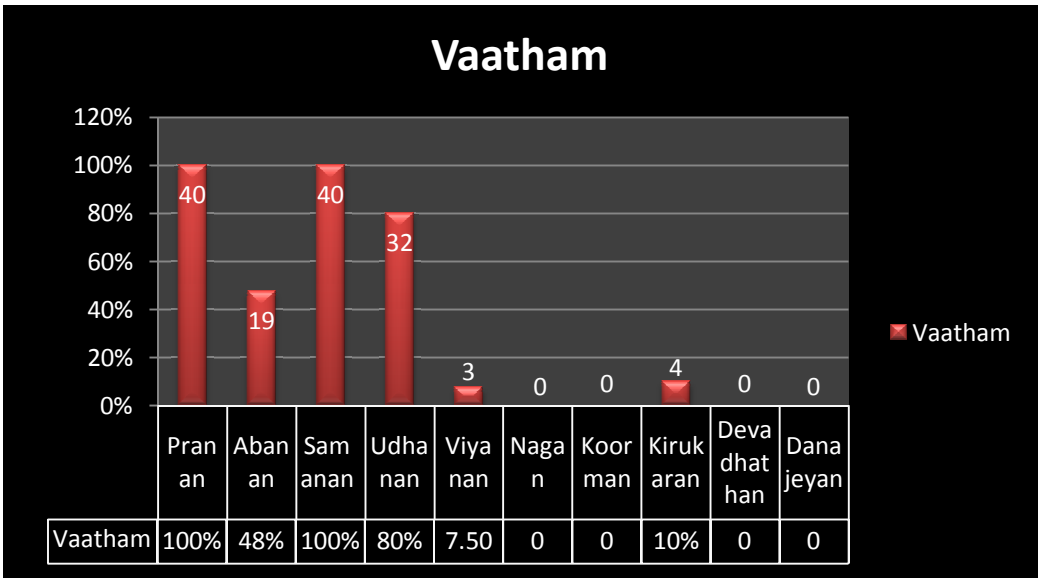
Observation:

As per table 12 and Fig 12. The chronicity of illness before recruitment for the study was more in 21(52.5%) cases with 2-5 years of illness then 4(10%) cases in the category within 6 months, 6-12months, bet 5-10 years and above 10 years. 3(7.5%) the chronicity of illness was found to be bet 1 – 2 years.

13. DERANGEMENT IN VATHAM:

CLASSIFICATION OF VALI	NUMBER OF CASES	PERCENTAGE
Pranan	**40**	**100 %**
Abanan	**19**	**47.5 %**
Samanan	**40**	**100** %
Udhanan	**32**	**80** %
Viyanan	3	7.5 %
Nagan	-	-
Koorman	-	-
Kirukaran	4	10 %
Devadhathan	-	-
Danajeyan	-	-

Table 13: **FIG 13**



Observation:

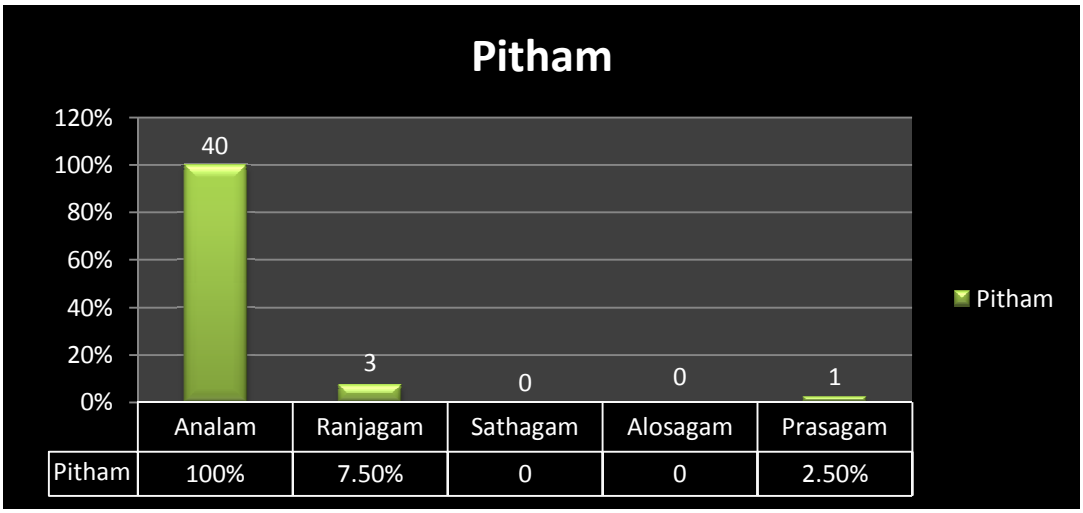
As per table 13 and Fig 13 Samanan and Pranan were affected in all the 40 (100%) Patients. In 32 (80 %) cases Udhanan was affected and Abanan was affected in 19 (47.5%) of the cases. Viyanan was affected in 3 (7.5%) cases and Kirukaran was affected in 4 (10%) cases.

14. DERANGEMENTS IN PITHA KUTRAM:

Table 14:

CLASSIFICATION OF AZHAL	NUMBER OF CASES	PERCENTAGE
Analam	40	100 %
Ranjagam	3	7.5
Sathagam	-	-
Alosagam	-	-
Prasagam	1	2.5 %

Fig 14



Observation:

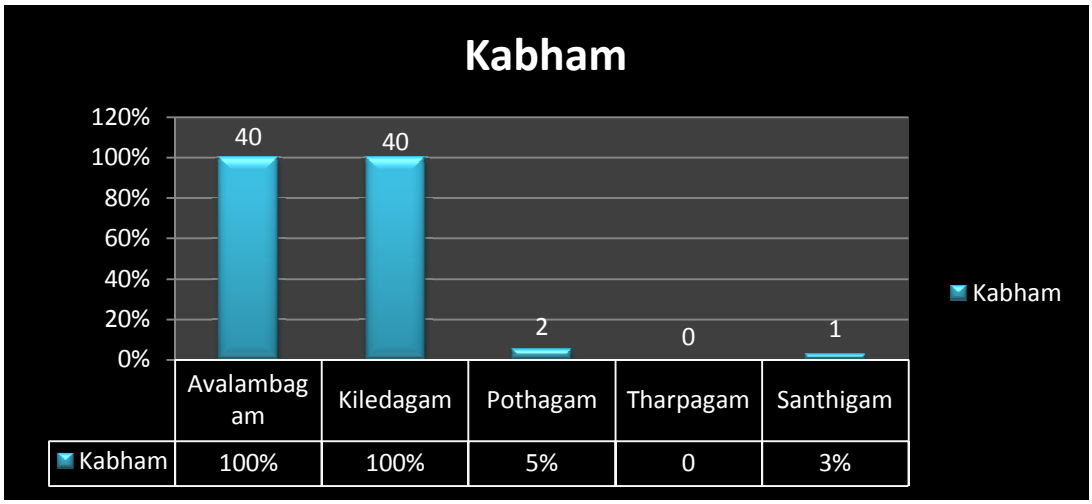
As per table 14 and Fig 14, Among the 40 (100%) cases, Analam was affected in all the 40 (100%) cases as a result of epigastric tenderness, indigestion, abdominal discomfort and Flatulence. Ranjagam was affected in 3 (7.5%) cases as a result of pale conjunctiva. Prasagam was affected in 1(2.5%) cases due to dull skin texture.

15. DISTURBANCES IN KABA KUTRAM:

Table 15:

CLASSIFICATION OF KABAM	NUMBER OF CASES	PERCENTAGE
Avalambagam	**40**	**100 %**
Kiledhagam	**40**	**100 %**
Pothagam	2	5 %
Tharpagam	-	-
Santhigam	1	2.5 (3) %

FIG 15



Observation:

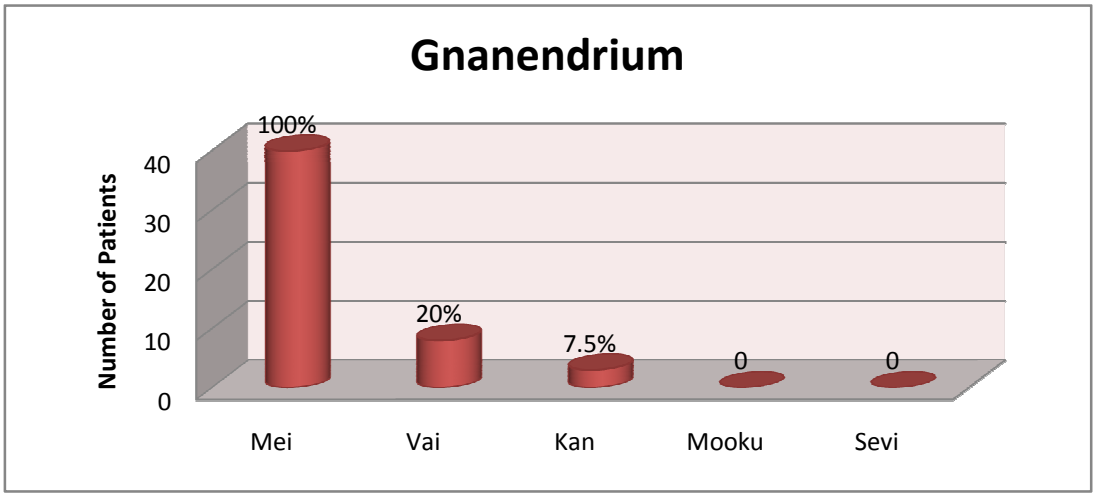
As per table 15 and Fig 15, Among 40 cases Avalambagam and Kiledagam were affected in all the 40 (100%) cases as a result of epigastric tenderness, indigestion, abdominal discomfort and Flatulence. Pothagam was affected in 2 (5%) cases with poor taste sensation and Santhigam was affected in 1 (2.5 %) as a result of pain in both limbs.

16. DISTURBANCES IN GNANENTHRIYAM:

Table 16:

SL.NO	GNANENDRIUM	NO OF CASES	PERCENTAGE
1	Mei	40	100
2	Vai	8	20 %
3	Kan	3	7.5%
4	Mooku	-	-
5	Sevi	-	-

Fig: 16



Observation:

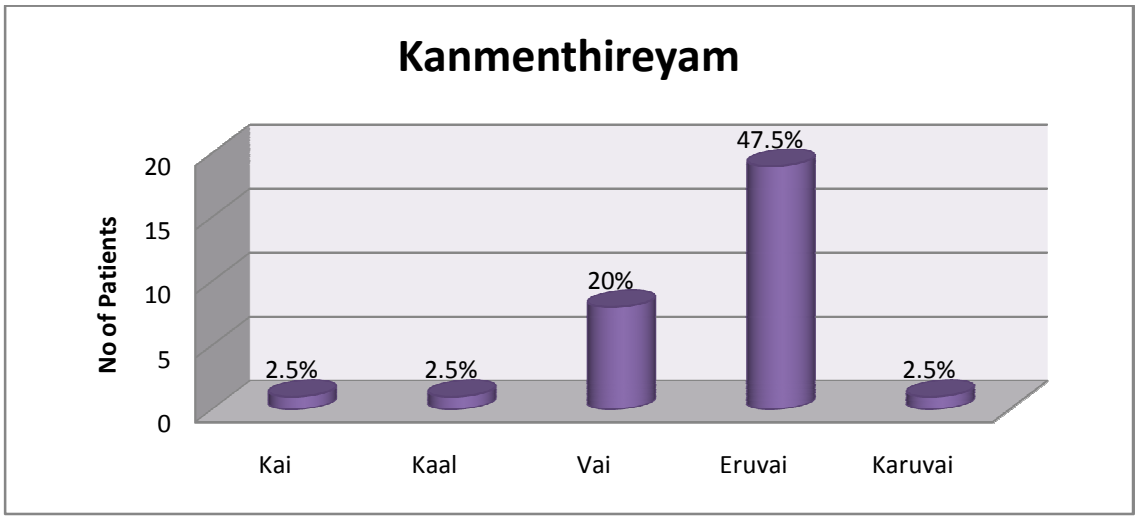
As per table 16 and Fig 16, Among 40 cases all 40 (100%) cases had Mei affected (Epi gastric tenderness). 8 (20%) cases had Vaai affected (mouth ulcers) and in 3 (7.5%) cases Kan was affected (pallor).

17. KANMENTHIRIYAM INVOLVEMENT:

Table 17

KANMENTHIRIYAM	NO.OF CASES	PERCENTAGE
Kai	1	2.5 %
Kaal	1	2.5 %
Vai	8	20 %
Eruvaai	19	47.5 %
Karuvaai	1	2.5 %

FIG 17



Observation:

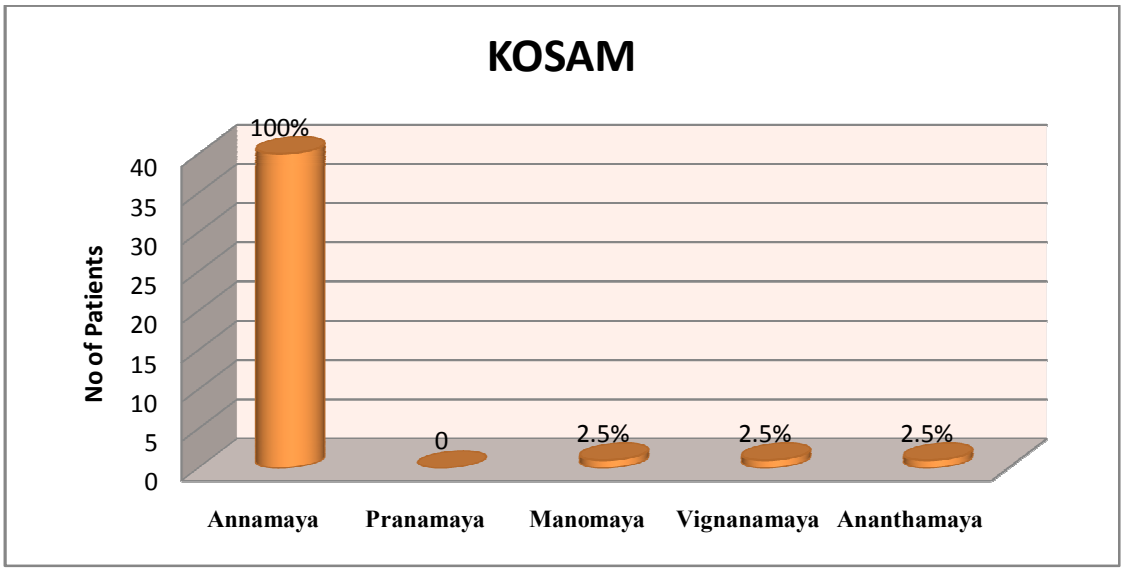
As per table 17 and Fig 17.Among the 40 cases, Eruvaai was affected in 19 (47.5 %) cases (variable in bowel habits). Vaai was affected in 8 (20 %) cases (Stomatitis). Kai (pain), Kaal (pain) and Karuvaai (white discharge) were affected in 1 (2.5 %) case.

18. KOSANGAL:

Table: 18

KOSANGAL	NO OF CASES	PERCENTAGE
Annamaya kosam	**40**	**100 %**
Pranamaya kosam	-	-
Manomaya kosam	1	2.5%
Vignana mayakosam	1	2.5%
Anantha mayakosam	1	2.5%

FIG: 18



OBSERVATION:

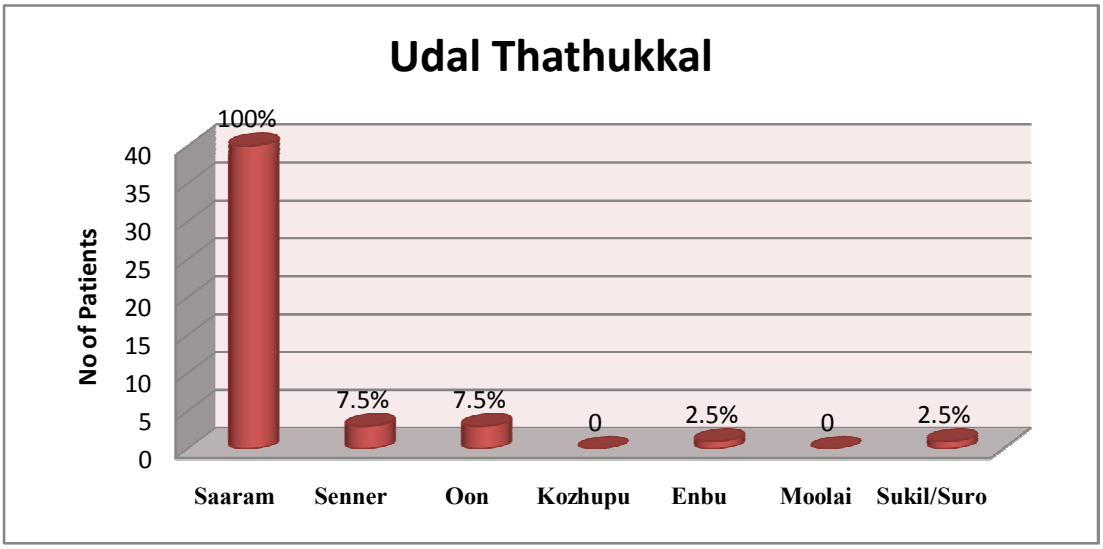
As per table 18 and Fig 18, In all the 40 cases Annamaya kosam was affected due to clinical symptoms like epigastric pain, flatulence, vomiting, indigestion and gripping abdominal pain. Manomaya kosam (depression), Vignanamaya kosam (pain) and Anantha maya kosam (White discharge) were affected each in 1 (2.5%) cases.

19. DISTURBANCE IN UDAL THATHUKKAL

Table 19:

UDAL THATHUKKAL	NUMBER OF CASES	PERCENTAGE
Saaram	40	100 %
Senneer	3	7.5 %
Oon	3	7.5 %
Kozhuppu	-	-
Enbu	1	2.5 %
Moolai	-	-
Sukkilam/Suronitham	1	2.5 %

FIG: 19



Observation:

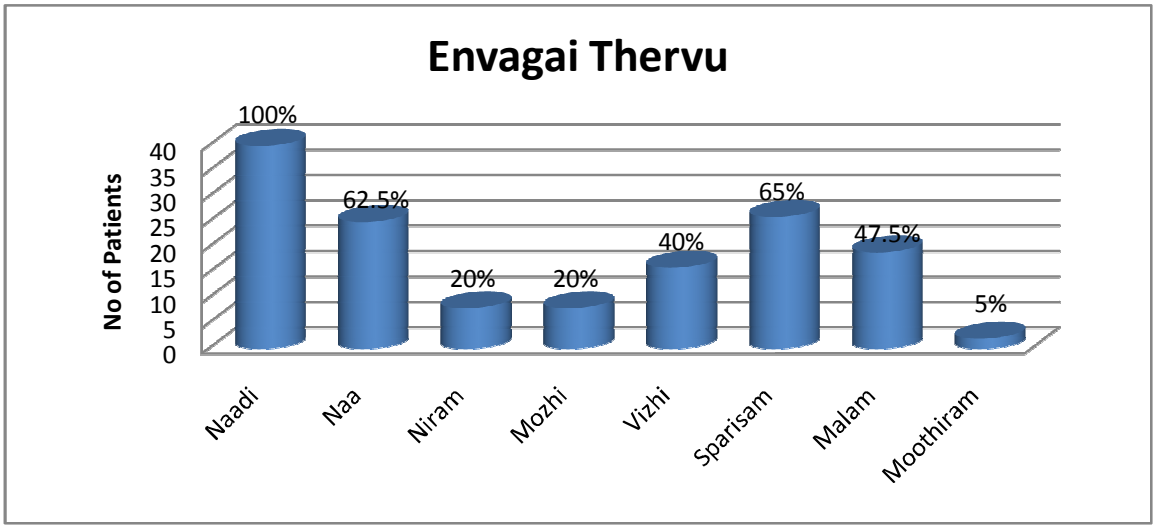
As per table 19 and Fig 19, Saaram, was affected in all the 40 cases due to generalized weakness, Oon (weight loss) and Senner (pale conjunctiva) were affected in 3 (7.5 %) cases. Enbu (pain in joints) and Suronitham (white discharge) were affected in 1(2.5%) cases.

20. ENVAGAI THERVUGAL (EIGHT DIAGNOSTIC METHODS)

Table 20

ENVAGAI THERVUGAL	NUMBER OF CASES	PERCENTAGE
Naadi (Vaatham & vaathapitham)	40	100%
Naa (Coating & Fissured)	25	62.5%
Niram (Pallor & Yellow)	8	20%
Mozhi (Reduction)	8	20%
Vizhi (Pallor & Yellow)	16	40%
Sparisam (Warmth)	26	65%
Malam (Constipation & Diarrhea)	19	47.5%
Moothiram (Dysurea)	2	5%

FIG 20



Observation

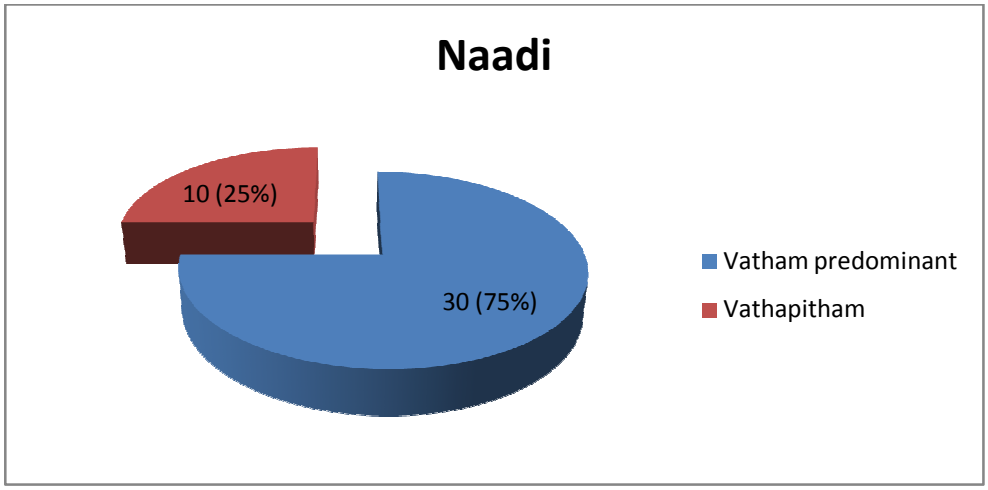
As per table 20 and Fig 20, Naadi was altered in all the 40 cases. Naa was affected in 25 (62.5%) cases, Vizhi was affected in 16 (40%) cases, Malam was affected in 19 (47.5%), Sparism was affected in 26 (65%) cases due to warmth and Niram & Mozhi were affected in 8 (20%) and Moothiram was affected in 2(5%) cases.

20. a. NAADI

Table 20 a

NAADI	NUMBER OF CASES	PERCENTAGE
Vatha predominat	**30**	**75%**
Vaatha pitham	10	25%
Total	40	100

FIG 20 a



Observation:

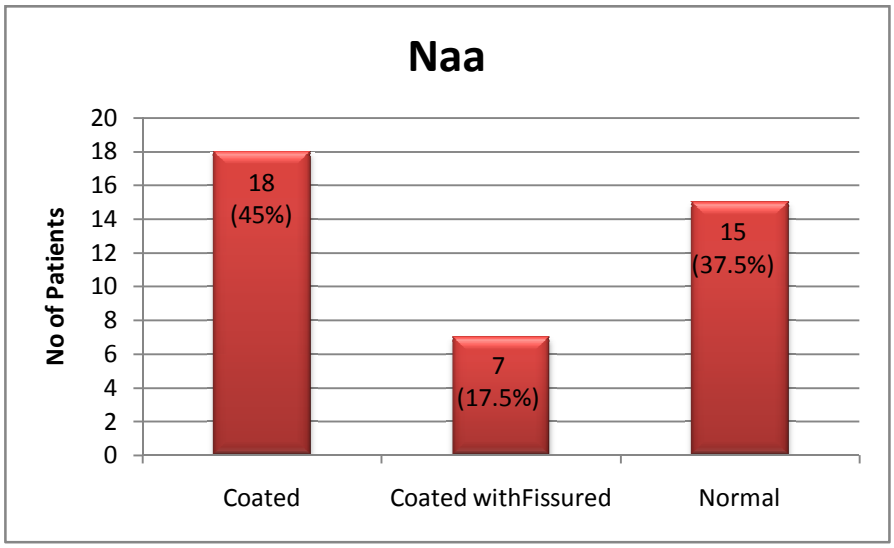
As per the table 20a and Fig 20a, Majority of the cases 30 (75%) revealed predominantly Vatha naadi and 10 (25%) with Vatha pitha tontha naadi.

20. b. NAA

Table 20 b

NAA	NUMBER OF CASES	PERCENTAGE
Coated	18	45 %
Coated with Fissured	7	17.5%
Normal	15	37.5 %
Total	40	100

FIG 20 b



Observation:

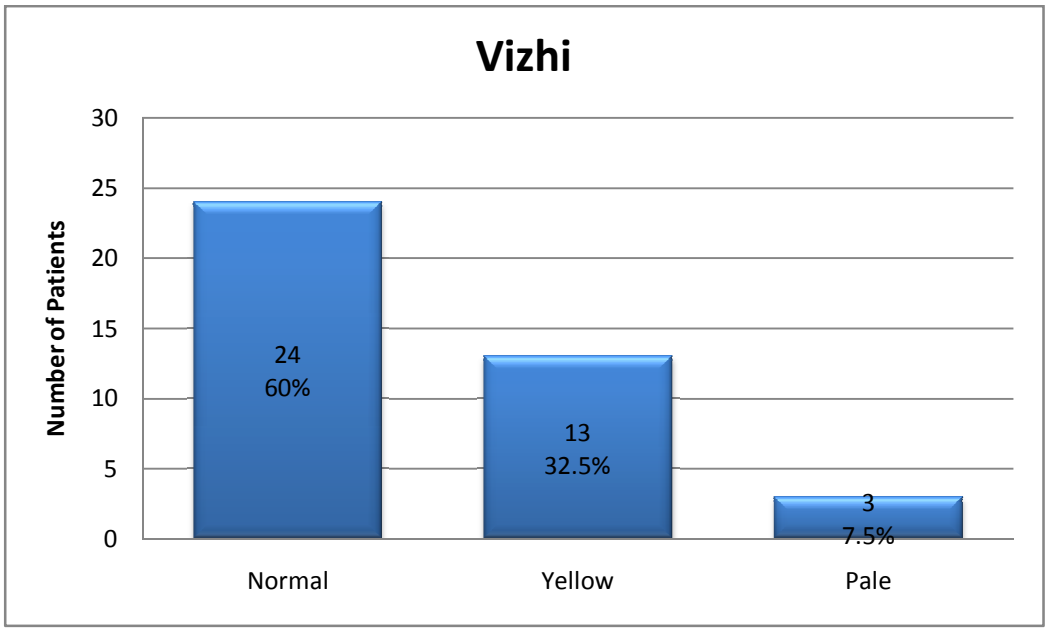
As per the table 20 b and Fig 20 b, Among the total of 40 patients Coated tongue is noted in 18(45%) of cases and Coating with Fissured tongue was noted in 7 (17.5%). 15 (37.5%) cases were found to be with normal tongue.

20. c. VIZHI

Table 20 c

VIZHI	NUMBER OF CASES	PERCENTAGE
Pale	3	7.5 %
Yellow	13	32.5 %
Normal	24	60%
Total	40	100

FIG 20 c



Observation:

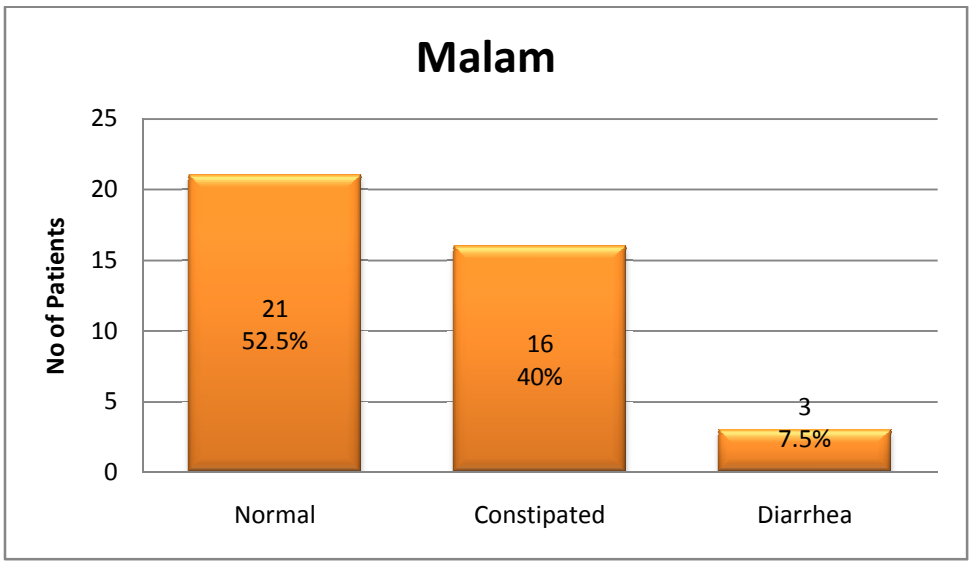
As per the table 20 c and Fig 20c, among the total of 40 patients Yellow conjunctiva is noted in 13 (32.5%) of cases, Pale colored conjunctiva was noted in 3 (7.5%) and normal Vizhi was observed in 24 (60%).

20. d. MAALAM

Table 20.d

MALLAM	NUMBER OF CASES	PERCENTAGE
Constipated	16	40 %
Diarrhea	3	7.5 %
Normal	21	52.5 %
Total	40	100

FIG 20 d



Observation:

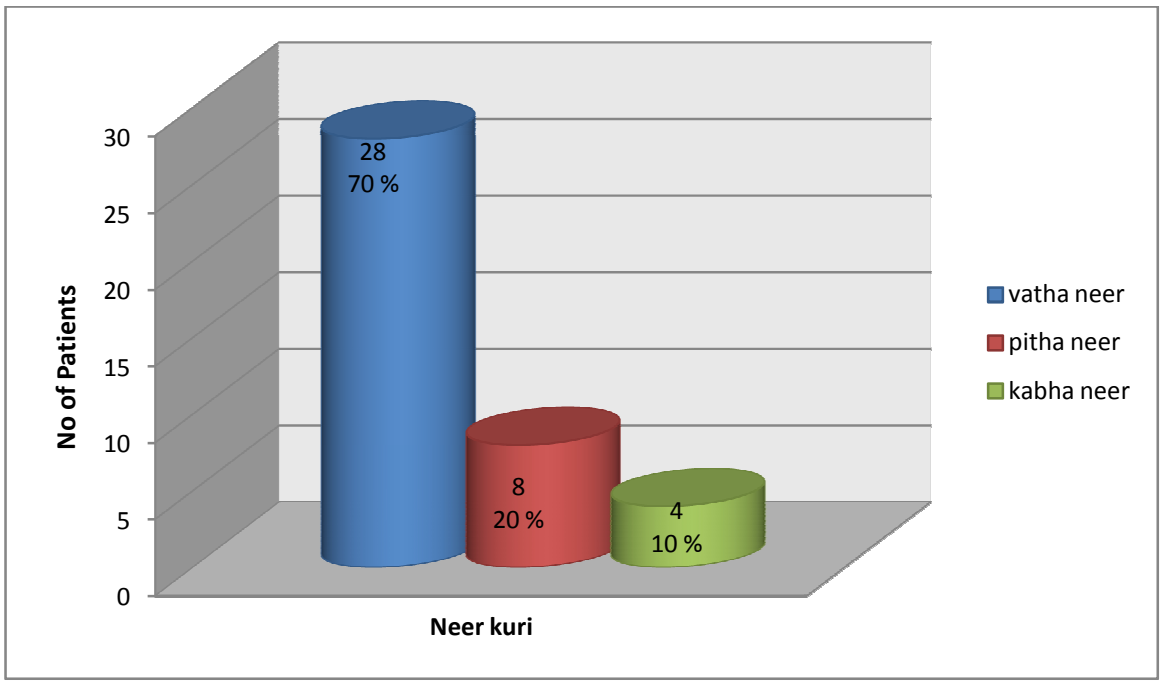
As per the table 20 d and Fig 20d, among the total of 40 patients Constipation was noted in 16 (40%) of cases and Diarrhea was noted in 3 (7.5%). Remaining 21(52.5%) cases had normal bowel habits.

20. e. NEIKKURI

Table 20 e.

PATTERN	NUMBER OF CASES	PERCENTAGE
Aravenaneendathu Vathaneer (Spreading like a snake)	28	70 %
Aazhipolparaviathu Pitha neer (Spreading like a ring)	8	20 %
Muththothu Ninrathu Kabaneer (Stands like a pearl)	4	10 %
Total	40	100

FIG 27



Observation:

As per the table 20 e and Fig 20 e, Among the total of 40 patients Vaatha neer was observed in 28 (70%) cases, Pitha neer was observed in 8 (20%) and Kabha neer was observed in 4 (10%) patients.

TABLE NO 21. CLINICAL FEATURES:

CLINICAL FEATURES	BEFORE		AFTER					
	NO OF CASES/40	%	RELIEVED	%	REDUCED	%	NO IMPROVEMENT	%
Indigestion	40	100%	34/40	85%	6/40	15%	-	-
Vomiting with residues of food	33	82.5%	30/33	91%	3/33	9%	-	-
Aversion to food	40	100%	36/40	90%	4/40	10%	-	-
Griping epigastric pain	40	100%	34/40	85%	4/40	10%	2/40	5%
Flatulence	31	77.5%	28/31	90%	2/31	6.5%	1/31	3.5%
Fatigue	28	70%	26/28	93%	2/28	7%	-	-
Generalised weakness	39	97.5%	39	100%	-	-	-	-
Sweating	2	5%	½	50%	-	-	½	50%
Excessive thirst	3	7.5%	3/3	100%	-	-	-	-
Headache	9	22.5%	8/9	89%	1/9	11%	-	-
Loss of weight	3	7.5%	2/3	67%	1/3	33%	-	-
Regurgitation	6	15%	4/6	67%	2/6	33%	-	-

Observation:

As per the table 21**,** Indigestion, Gripping epigastric pain and aversion to food were found in all the 40 (100%) patients. Vomiting, flatulence and generalised weakness were present in majority of patients 33 (82.5%), 31 (77.5%) and 39 (97.5%) respectively. 28 (70%) patients had fatigue, 9 (22.5%) patients had Headache, 6 (15%)patients were affected by regurgitation,3 (7.5%) patients were found to have loss of weight and excessive thirst and 2 (5%) patients have increased sweating.

After treatment there was a considerable reduction in all symptoms, except 2 (5%)patients showed no reduction in griping epigastric pain and 1 showed no reduction in flatulence.

FIG 21 a

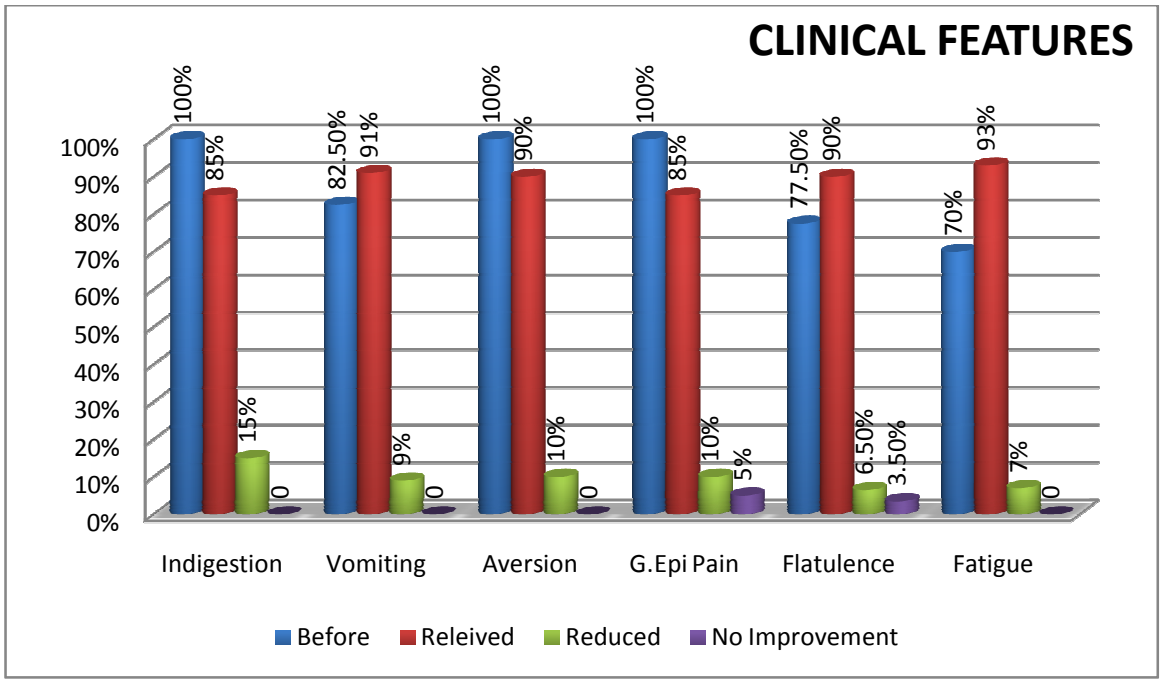
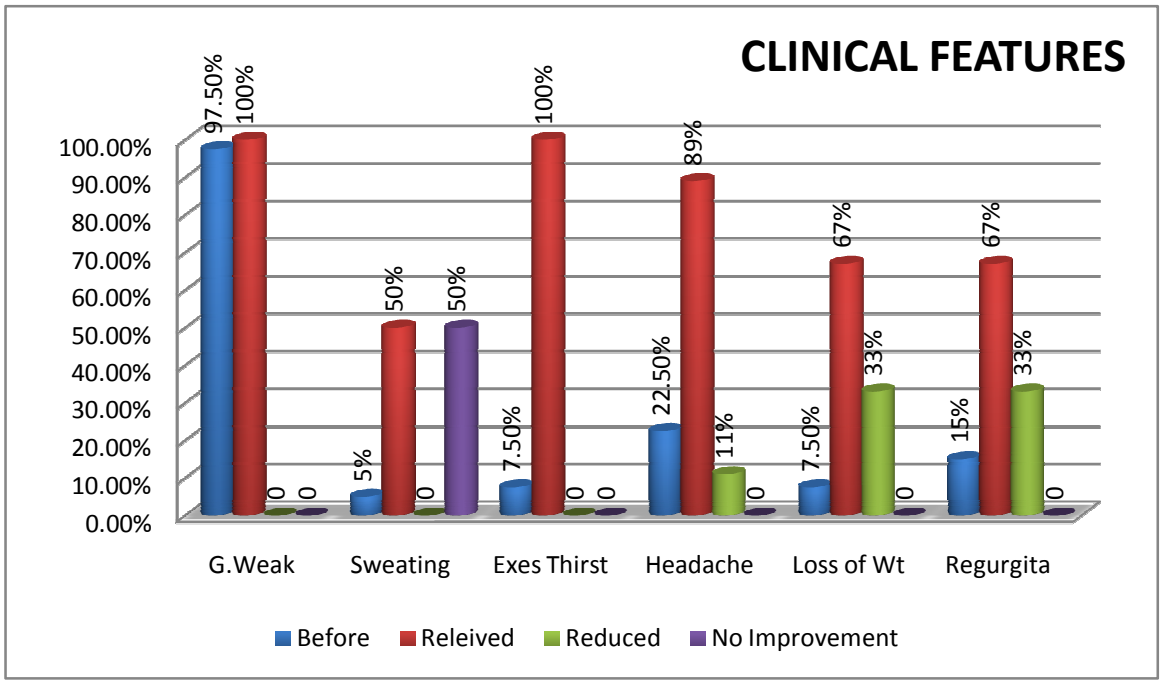


FIG 21 b

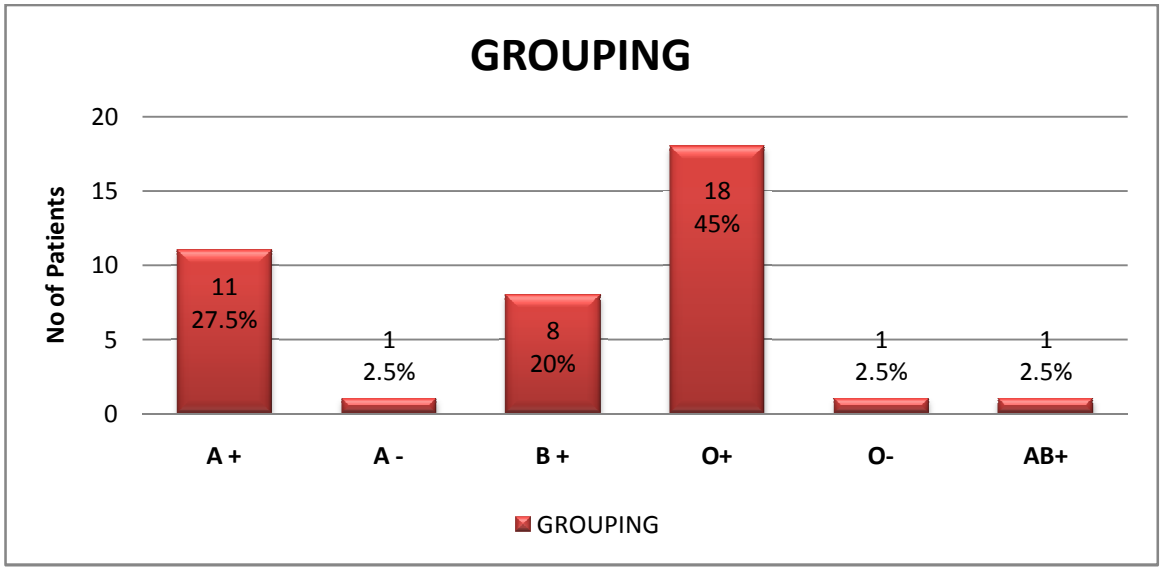


22. BLOOD GROUPING

Table 22

BLOOD GROUPING	NUMBER OF CASES	PERCENTAGE
A +	11	27.5%
A -	1	2.5%
B +	8	20%
O+	18	45%
O-	1	2.5%
AB+	1	2.5%
TOTAL	40	100%

Fig 22



Observation:

As per the table 22, among the 40 patients, 18(45%) belongs to the O+ Blood group, 11(27.5%) belongs to the A+ Blood group, 8(20%) belongs to the B+ Blood group and 1(2.5%) each belongs to the blood groups AB+, A- and O- respectively.

Observation with reference to symptom score according to vaezl , Grading and Staging in Gastroenterology:

Level 1 – marks scored between 0 – 5

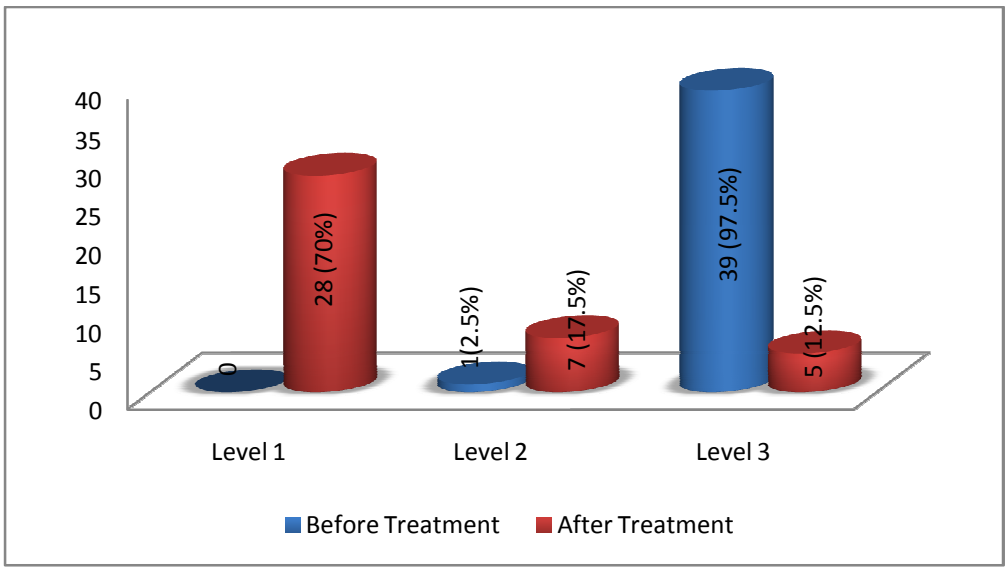
Level 2 – marks scored between 6 – 10

Level 3 – marks scored between 11 – 15

Table 23:

LEVELS (SCORES)	SYMPTOM SCORE BEFORE TREATMENT		SYMPTOM SCORE AFTER TREATMENT	
	NO. OF CASES	PERCENTAGE	NO. OF CASES	PERCENTAGE
I (0-5)	0	0 %	28	70 %
II (6-10)	1	2.5 %	7	17.5 %
III(11-15)	39	97.5 %	5	12.5 %
TOTAL	40	100	40	100

FIG 23



Observations:

According to Vael's symptom score of Grading and Staging in Gastroenterology, (Table 22)

Among the 40 patients

Before treatment 1(2.5%) patient was found to be in level 2 and 39 (97.5%) patients were found to be in Level 3.

After treatment 28 (70%) patients were in level 1, 7(17.5%) patients were in Level 2 and 5(12.5%) patients were in Level 3.

STATISTICAL ANALYSIS:

Symptom score Paired Samples Statistics

SYMPTOM SCORE	MEAN ± SD	t VALUE	p VALUE
Before treatment	**14.33 ± 1.185**	**18.930**	**P <0.001**
After treatment	**5.40 ± 3.037**		

The mean± standard deviation of symptom score of patients before and after treatment were 14.33 ± 1.185 and 5.40 ± 3.037 respectively which is statistically significant (t= 18.930 p<0.001).

Haemoglobin Paired Samples Statistics

HAEMOGLOBIN	MEAN ± SD	t VALUE	p VALUE
Before treatment	**13.85 ± 1.8**	**-2.714**	**P <0.010**
After treatment	**14.55 ±1.97**		

The mean± standard deviation of Haemoglobin of patients before and after treatment were 13.85 ± 1.8 and 14.55 ± 1.97 respectively which is statistically significant (t= -2.714 p<0.010).

LAB INVESTIGATIONS:

ENDOSCOPIC EVALUATION

Among the 40 patients screened 12 patients were found to have endoscopic study before treatment itself. After the completion of drug administration for 48 days, 5 patients willing to undergo endoscopic study were undergone the procedure and compared.

S.No of Patient	Before treatment	After treatment
1.	Duodenal ulcers (healing), Duodinitis, **Gastritis.**	**Normal** Gastro- Deodenoscopy
2.	**Antral Gastritis**	**Normal** study
3.	**Antral Gastritis**	**Normal**
4.	Multiple Duodenal ulcer with Duodenitis, **Gastritis**	**Normal** Gastro- Deodenoscopy
5.	**Gastritis**	**Normal** mucosal study

Observations:

Endoscopic evaluation of the 5 patients after treatment shows no inflammation in the gastric mucosa and they were found to be normal.

DISCUSSION

Vaayu Kunmam is one among the eight types of Kunmam as mentioned by Siddhar Yugi in his 'Yugi Vaithia chinthamani' The signs and symptoms of Vaayu Kunmam are Indigestion, nausea or Vomiting, aversion to food, flatulence, gripping abdominal pain and generalized weakness. These are similar to Gastritis in modern system of medicare. The aim of the study is to evaluate the safety and therapeutic efficacy of the trial drug Vediyuppu Kattu in the treatment of Vaayu Kunmam.

In the siddha literature 'Yakoobu Vaidhiya Chinthamani 700' the drug Vediyuppu Kattu is mainly indicated for Atta Kunmam and Vaayu. Vediyuppu Kattu comprises of two mineral drugs namely vediyuppu and seenam which are found to be very efficacious in the treatment of vaayu Kunmam as per the text 'Patartha Guna Chinthamani'.

The raw drugs were purchased from reputed country drugs stores and authenticated by the concerned department. The trial drug was prepared by the standard operating procedure as mentioned in the protocol in the Dept of Gunapadam, National Institute of Siddha under the direct supervision of lecturers.

The safety of the trial drug usage and standardization of the trial drug through biochemical analysis were also ensured during the study.

The preclinical toxicity studies (Acute and long term toxicity) for the above said trial drug was carried out at National Institute of Siddha after getting the proper acceptance and permission from the Institutional Animal Ethical Committee. The trial drug was proved to be safe for human beings from the observations made from the study.

The biochemical qualitative and quantitative analysis were done at the Biochemistry lab of NIS. SEM analysis and Trace metal detections were carried out at Sophisticated Analytical Instrument Facility, IIT, Chennai. It revealed the presence of effective minerals and the existence of the drug molecules at micro level.

After the approval of the Institutional Ethical Committee of NIS, the clinical study was conducted with a well defined protocol with a proper proforma under the direct supervision of faculties of Dept of Maruthuvam. After screening 70 cases reporting at the OPD, 40 cases were selected for induction to the trial. The patient who satisfied the

Inclusion and Exclusion criteria were admitted to the trial. The patients were well explained about the clinical trial and informed consent was obtained from them.

The enrolled patients were subjected to lab investigations before and after treatment. On the day one of the treatment the patients were advised to take Agasthiyar kuzhumbu 130 mg with ginger juice, at early morning for purgation to normalize the deranged thodams. From the 2nd day onwards the patients were treated with the trial drug Vediyuppu Kattu 800mg with Thirikadugu Chooranam 400 mg, internal twice daily for a period of 48 days.

For OP patients, they should visit the hospital once in 7 days. At each clinical visit clinical assessment was done and prognoses were noted. For IP Patients clinical assessment was done daily and prognosis was noted.

For IP patients, who were not in a situation to stay in the hospital for a long time were advised to attend the OPD for the continuation of the treatment. All the patients were put under observation for 2 months as follow up period without the trial drug treatment.

The observations are summarized below.

1. Incidence with Age distribution:

Among the 40 patients

- 7(17.5%) cases were observed to be in the age group of 21 to 30 years
- 19 (47.5%) cases were observed to be in the age group of 31 to 40 years.
- 12 (30%) of cases were observed to be in the age group of 41 to 50 years.
- 2 (5%) cases were observed to be in the age group of 51 to 60 years.

Inference: In this study the prevalence was more in the age group 31 - 40 years. i.e the middle decade of life is mostly suffered with more stress.

2. Incidence with Sex distribution:

Out of 40 patients, 25(62.5%) cases were males and 15(37.5%) cases were females.

Inference: In this study the prevalence was more in males than the females, which clearly states the prevalence and predominance of the disease in males who may have irregular dietary habits and may consume alcohol or smoking.

3. Incidence with reference to Gunam:

All the 40 cases were observed with Rasatha gunam.

4. Incidence with reference to constitution of the body:

All the 40 (100%) cases were observed with Vaatha predominant.

5. Incidence with reference to Paruvakalam:

Among the 40 cases observed,

- 22 cases (55%) the incidence of the disease was observed in Ilavenil kaalam
- 10 cases (25%) the incidence of the disease was observed in Muthuvenilkaalam
- 8 cases (20%) the incidence of the disease was observed in Kaar kaalam.

6. Incidence with reference to Thinai:

Among the 40 cases observed

- 28 (70%) cases were observed to be from Marutham.
- 11 (27.5%) cases were observed to be from Neithal
- 1 (2.5%) case was observed to be from Paalai.

Inference: According to Siddha literature Neithal land which comprises Sea shore and its adjoining areas induce Vatha diseases.

Though Marutham land is said to possess healthy leaving, now a day's change in lifestyle and food habits may induce the diseases.

7. Incidence with reference to Diet:

Among the 40 cases observed

- 38 (95%) cases were observed to have Non-vegetarian diet.
- 2 (5%) cases were observed to have vegetarian diet.

Inference: Intake of Non Veg diet may lead to increased acid secretion in the stomach, which in turn may lead to the disease.

8. Habits of Smoking and Alcohol:

Among the 40 cases observed

- 8 (20%) cases were found to be with the habit of Smoking and Alcohol
- 1 (2.5%).case was found to have the habit of Smoking alone.

Inference: In 9(22.5%) cases the onset of disease may be due to the habit of smoking and alchol.

9. Occupation status:

Among the 40 cases observed

- 24 cases(60%) were doing Field work
- 8 cases (20%) were doing Desk work and
- 8 cases (20%) were found to be with other works

10. Incidence with reference of Socio-economic status:

Among the 40 cases observed

- 27 (67.5 %) cases belonging to Middle class.
- 13 (32.5 %) cases belonging to lower class.

Inference: The incidence of the disease was found to be higher 27 (67.5 %) in Middle class.

11. Incidence due to familial involvement history:

Among the 40 cases observed

- 4 (10%) cases had the incidence of the disease in their first degree relationship.
- 36 (90%) cases did not have any family history for the incidence of the disease.

Inference: In this study only few patients had familial history related to the disease.

12. Incidence with reference to chronicity of illness:

Among the 40 cases observed,

- In 21 (52.5%) of the cases the chronicity of illness was between 2 – 5 years.
- In 4 (10%) of the cases the chronicity of illness was within 6 months.
- In 4 (10%) of the cases the chronicity of illness was between 6 months-1 year.
- In 4 (10%) of the cases the chronicity of illness was between 5-10 years.
- In 4 (10%) of the cases the chronicity of illness was more than 10 years.
- In 3 (7.5%) cases the chronicity of illness was between 1 – 2 years.

Inference: The chronicity of illness before recruitment for the study was more in 21(52.5%) cases who were between the time intervals of two years to five years.

CONDITION OF MUKKUTTRAM:

13. Derangement in Vadha kutram:

Among the 40 cases,

- Pranan was affected in 40 (100%) cases which resulted in indigestion.
- Abanan was affected in 19 (47.5%) cases which resulted in constipation in 16 patients and Diarrhea in 3 Patients..
- Samanan was affected in all 40 (100%) cases as a result of epigastric pain, flatulence, indigestion and abdominal discomfort.
- Udhanan was affected in 32 (80%) of cases which resulted in Nausea and vomiting.
- Viyanan was affected in 3 (7.5 %) cases resulted in body pain.
- Kirukaran was affected in 4 (10%) cases resulted in excess salaivation.
- Naagan, Koorman, Devadhathan and Dhananjeyan were remained normal in all 40 cases.

14. Derangement in Pitha Kutram:

Among 40 cases,

- All 40 (100%) cases Anarpitham was affected, which resulted in loss of appetite, indigestion and abdominal discomfort
- In 3 (7.5%) cases Ranjaga pitham was affected resulted in pallor of conjunctiva.
- In 1 (2.5%) case Prasaga pitham was affected resulted in reduced glowing of skin.

15. Derangement in Kabha kutram:

Among 40 cases,

- Avalambagam was affected in 40 (100%) cases, due to the derangement of Kilethagam.
- Klethagam was affected in 40 (100%) cases resulted in digestive disorders.
- Pothagam was affected in 2 (5%) cases resulted in tastelessness.
- Santhigam was affected in 1 (2.5%) case resulted in joint pain.

16. Incidence with reference to the Gnanendrium:

Among 40 cases,

- Mei was affected in all 40 (100%) cases (epi gastric tenderness was felt)
- Vai was affected in 8 (20%) cases (Stomatitis)
- Kan was affected in 3 (7.5%) cases (pallor of the conjunctiva)

17. Incidence with reference to the Kanmendrium:

Among 40 cases,

- Kai (Upper limb) and Kal (Lower limb) were affected in 1(2.5%) (pain in the joints)
- Vai (Mouth) was affected in 8 (20%) cases (stomatitis)
- Eruvai was affected in 19(47.5%) cases (constipation in 16 and diarrhea in 3 patients)
- Karuvai was affected in 1(2.5%) patient (white discharge)

8. KOSANGAL:

Among the 40 cases

- Annamaya kosam was affected in all 40 cases (epigastric pain, flatulence, vomiting, indigestion and gripping abdominal pain)
- In 1 (2.5%) case Vignanamaya kosam was affected (pain in joints)
- In 1 (2.5%) case Manomaya kosam was affected (mental depression)
- In 1 (2.5%) case Ananthamaya kosam was affected (presence of white discharge)

19. Incidence with reference to the Udal thathukkal:

Among 40 cases,

- Saaram was affected in all 40 (100%) cases that produced the symptoms like Generalised weakness and tiredness.
- Senneer was affected in 3 (7.5%) cases that produced the signs like pale conjunctiva of the eyes.
- Oon was affected in 3 (7.5%) cases that lead to weight loss.
- Enbu was affected in 1 (2.5%) cases that produced the symptoms like joint pain.
- Suronitham was affected in 1 (2.5%) case with white discharge.

20. Incidence with reference to the Envagai thervugal:

Among 40 cases,

- Naadi: Under this study of naadi, all the 40 cases showed Vaatham 30(75%) and its tontham with Pitham (25%).
- Naa was affected in 25(62.5%) cases as it showed coating of tongue in 18 (45%) and coating and fissured in 7(17.5%).
- Niram was affected in 8(20%) case as it was observed by pallor and yellowish discolouration of the skin.
- Mozhi was affected in 8 (20 %) cases as it leads to reduction of voice due to epigastric pain.
- Vizhi was affected in 16 (42.5%) cases as it showed pale in 3(7.5%) and Yellow discolourisation of conjunctiva in 13(32.5%).
- Sparisam was affected in 26 (65%) cases (warm feel on touching)

- Malam was affected in 19 (47.5%) cases, leading to constipation in 16(40%) and Diarrhea in 3(7.5%) of cases.
- Moothiram was found to be affected in 2 (5%) patient with burning sensation during urination.

20. a. Incidence with reference to the Naadi type:

Majority of the cases 30 (75%) revealed Vatha naadi and 10 (25%) with Vatha pitha tontha naadi.

20. b. Incidence with reference to the Naa changes:

Among the total of 40 patients

Coated tongue is noted in 18 (45%) of cases and coated with fissured tongue was noted in 7 (17.5%). Remaining 15 (37.5%) cases were found to be normal.

20. c. Incidence with reference to the Vizhi:

Among the total of 40 patients

Yellow conjunctiva is noted in 13 (32.5%) of cases and Pale colored conjunctiva was noted in 3 (7.5%) and normal Vizhi was observed in 23 (57.5%) of cases.

20. d. Incidence with reference to the Malam:

Among the total of 40 patients

Constipation is noted in 16 (40%) of cases and Diarrhea was noted in 3 (7.5%) cases. Remaining 21(52.5%) had normal bowel habits.

20. e. Incidence with reference to the Neikuri:

Among the 40 patients,

- Vaatha neer was observed in 28(70%) of cases,
- Pitha neer was observed in 8(20%) cases,
- Kabha neer was observed in 4(10%) of cases.

OUTCOME MEASURES:

21. CLINICAL FEATURES:

Observation with reference to Clinical symptoms:

1. **Indigestion**

   Among 40 patients all are found to have Indigestion.

   - In 34(85%) cases complete relief was found.
   - In 6(15%) cases there was reduction in symptom was present.

2. **Vomiting with residues of food**

   Among 40 patients, 33 (82.5%) patients were found to have Vomiting with residues of food. Out of the 33 cases,

   - In 30(91%) cases complete relief was found.
   - In 3(9%) cases there was reduction in symptom was present.

3. **Aversion to food**

   Among 40 patients all were found to have the symptom aversion to food. Out of them,

   - In 36(90%) cases complete relief was found.
   - In 4(10%) cases there was reduction in symptom was present.

4. **Griping epigastric pain**

   Among 40 patients all were found to have the symptom of Griping epigastric pain. Out of them,

   - In 34 (85%) cases complete relief was found.
   - In 4 (10%) cases reduction in symptom was present.
   - In 2 (5%) cases there was no improvement.

5. **Flatulence**

   Among 40 patients 31 (77.5%) were found to have the Flatulence. Out of 31 patients,

- In 28 (90%) cases complete relief was found.
- In 2 (6.5%) cases reduction in symptom was present.
- In 1 (3.5%) case there was no improvement.

6. **Fatigue**

   Among 40 patients, 28 (70%) patients were found to have Fatigue. Out of the 28 patients,

   - In 26(93 %) cases complete relief was found.
   - In 2(7 %) cases there was reduction in symptom was present.

7. **Generalized weakness**

   Among 40 patients 39(97.5%) were found to have generalized weakness. After treatment all are found to have complete relief.

8. **Sweating**

   Among 40 patients only 2(5%) were found to have sweating. Out of them, One was found to have complete relief and in the other there was no impact.

9. **Excessive thirst**

   Among 40 patients only 3 (7.5%) were found to have the symptom of excessive thirst. After treatment all are found to have complete relief.

10. **Headache**

    Among 40 patients 9 (22.5%) patients were found to have Headache. Out of the 9 patients,

    - In 8(89 %) cases complete relief was found.
    - In 1(11 %) case there was reduction in symptom was present.

11. **Loss of weight**

    Among 40 patients only 3 (7.5%) were found to have Loss of weight. Out of the three patients, after treatment 2 patients (67%) showed weight gain and 1patient (33%) showed no further weight loss.

12. Regurgitation

Among 40 patients, 6 (15%) patients were found to have Regurgitation.. Out of the 6 patients

In 4(67 %) cases complete relief was found.

In 2(33 %) cases there was reduction in symptom was present.

22. Incidence with Blood grouping:

Among the 40 patients included in the study

- 18(45%) belongs to the O+ Blood group,
- 11(27.5%) belongs to the A+ Blood group,
- 8(20%) belongs to the B+ Blood group and
- 1(2.5%) each belongs to the blood groups AB+, A- and O- respectively

23. Observation with reference to symptom score according to vaezl , Grading and Staging in Gastroenterology.

Among the 40 patients

- 1(2.5%) patient was found to be in level 2 and 39 (97.5%) patients were found to be in Level 3 during the induction for treatment.
- After treatment 28 (70%) patients were in level 1, 7(17.5%) patients were in Level 2 and 5(12.5%) patients were in Level 3.
- This reduction in score after the treatment reveals the efficacy of the drug in the treatment of Vaayu Kunmam.

24. STATISTICAL ANALYSIS

I. SYMPTOM SCORE BEFORE AND AFTER TREATMENT.

BIO STATISTICAL ANALYSIS

The clinical trials of the drug Vediyuppu kattu (Internal) is differentiated in terms of percentages. The effectiveness of the drug is assessed by using paired comparison test (paired t test). The responses of the patients to the drug are analyzed.

Assessment of the effectiveness of drug:

The effectiveness of the drug was assessed by the relief of the patients from clinical symptoms, and which is measured using symptom score.

Inference: The test drug was statistically significant ($p>0.001$) it shows its effectiveness in the treatment of Vaayu kunmam (Gastritis).

25. ENDOSCOPIC EVALUATION

Among the 5 patients with endoscopic evaluation

Before the treatment 2 patients had the impression of Gastritis, 1 patient with Antral Gastritis, 1 patient with Gastritis associated with inflammation in the body of stomach and 1 patient with Gastritis associated with Duodenal ulcers and Deodenitis.

After the treatment all the 5 patients showed considerable improvement in the endoscopic evaluation and found to have normal endoscopic study.

BIOCHEMICAL ANALYSIS:

- Qualitative analysis of Vediyuppu kattu done in NIS biochemical lab revealed that it contains inevitable constituents like calcium, Iron and sulphate
- Quantitative analysis revealed that it contains chiefly
  - 2.325 mg/L of Sulphur.
  - 8.654 mg/L of Phosphorous.
  - 5.231 mg/L of Aluminium
  - 15.45 mg/L of Sodium
  - 200.528 mg/L of Potasium.
  - 9.564 mg/L of Silicate
- The SEM is carried out by using FEI-Quanta FEG 200-High Resolution Instrument the PPM (PARTICLE PER MILLION) size seems to be **0.5 - 2µ.**

TOXICITY STUDY:

ACUTE TOXICITY:

Acute toxicity studies done in National Institute of Siddha, as per WHO guide lines revealed the safety of the drug in oral dose (28.8mg/animal for mice) as it did not produce any adverse effects in the animals. There were no abnormalities detected in the internal organs on necropsy.

CHRONIC TOXICITY:

Chronic toxicity- Long term toxicity studies done in National Institute of Siddha, as per WHO guide lines did not reveal any adverse effects in the animal. Animal behavior, metabolic functions (food and water intake, defaecation, urination etc) did not reveal any abnormality. Blood investigation parameters and histopathological examination did not show any abnormal variations.

Hence it can be concluded from the study that up to maximum dose (288 mg/animal for wister rat) the drug was proved to be safe.

SUMMARY

- The aim of the study was to evaluate the safty and efficacy of the drug Vediyuppu Kattu in the treatment of Vaayu Gunmam.
- Before initiating the clinical trial, approval was got from the Institutional Animal Ethical Committee IAEC : 1248/ac/09/CPCSEA/4-06/2011 – 6 Dt. 20.12.2011and Institutional Ethical Committee IEC : NIS/IEC/2011/3/06 – Dt. 24.12.2011 for conducting the pre clinical studies and clinical studies respectively by submitting the well defined protocol and proforma.
- The raw drugs were authenticated by the concerned department and the trial drug was prepared in the Gunapadam lab of National Institute of Siddha as per the Standard Operating Procedure mentioned in the protocol.
- The medicine was then subjected to toxicity studies (Acute and long term toxicity studies) as per the protocol and the safety of the drug was ensured.
- The qualitative and quantitative bio chemical studies were done at the bio chemistry lab of National Institute of Siddha.
- SEM analysis and trace metals detection were done at Sophisticated Analytical Instrument Facility, IIT, Chennai.
- Among the 70 cases screened at the OPD of department of Maruthuvam NIS, 40 cases were recruited for the trial as per the inclusion and exclusion criteria.
- Clinical diagnosis of Vaayu Gunmam was made by Siddha and Modern methodology.
- Before inducement into the trial informed consent was obtained from the patients. Out of the 40 cases 28 cases were treated in OPD and 12 cases in IPD.
- A day before the trial drug administration, puragation was given to correct the elevated Vatha thathu and bring other two deranged thathus to equilibrium.
- The clinical trial was conducted with the trial medicine Vediyuppu Kattu 800 mg b.i.d with Thiri Kadugu Chooranam 400mg internal, for a period of 48 days, referred under the Siddha literature Yaakoobu Vaidhiya Chinthamani 700 respectively..
- Diet restriction was strictly followed during the period of drug administration. as per noted in the form IV E (Dietary advice form).

- Required lab investigations were carried out before and after the treatment and the concerned data was recorded in the proforma.
- Clinical assessment was done daily in all the IP patients and in OP patients it was assessed once in 7 days.
- During the study period, there was no event of any adverse reactions owing to the drug or disease.
- In these studies out of 40 cases, 35 cases (87.5%) were found to be relieved from the clinical symptoms. In 3 cases (7.5%) the clinical symptoms were found to be reduced and no reduction was found in 2 cases (5%).
- As per the Siddha Literature and modern science reviews and research articles, the ingredients of the trial drugs were found to have the property of controlling the disease Vaayu Gunmam.
- Endoscopic evaluation of the patients before and after treatment shows the reduction of inflammation in the stomach. This showed the therapeutic effect of the drug in controlling the disease to a greater extent.
- Statistical analysis showed significant reduction in symptoms and health assessment score assessed before and after the treatment ($P< 0.010$). Statistical analysis on lab parameters and toxicity studies also showed significant outcome.
- Oral toxicity studies conducted ensured the safety usage of the drug to animals up to a maximum dose of 28.8 mg/animal for mice and 288mg/animal for wister rat.
- Bio chemical analysis showed the presence of inevitable constituents like Calcium, Iron, Sulphate which plays a role in repairing and preventing the Gastric mucosal damage and inflammation in the disease.
- The minimum particle size (0.5 - 2µ) unveiled in the (Particle Per Million size) PPM analysis shows the existence of the drug in micro particle size which contributes its therapeutic effect by the increased bio availability.

CONCLUSION

- The safety studies (the acute toxicity and long term toxicity) conducted revealed that the trial drug was safe even at higher dosage of 28.8 mg/animal for mice and 288mg/animal for wister rat. There were no abnormalities found in blood investigation and histopathological examination. Hence it can be reasonably assumed that the drug is safe for human.
- Clinical study revealed the therapeutic efficacy of the trial drug by showing, complete relief in 87.5% (35) cases and reduction of symptoms in 3 (7.5%) cases out of 40 cases.
- Improvement was noted in the Endoscopic evaluation of patients after the treatment when compared with before, revealing the control of the disease.
- There were no adverse reactions observed during the trial.
- Because of the encouraging clinical outcome, the study may be further carried out with the same drug in a large number of cases of Vaayu kunmam.

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BIO -CHEMICAL ANALYSIS OF VEDIYUPPU KATTU

ANALYSED AT NATIONAL INSTITUTE OF SIDDHA

S.No	EXPERIMENT	OBSERVATION	INFERENCE
1.	Physical Appearance of sample	White in colour	
2.	**Solubility:** a. A little (500mg) of the sample is shaken well with distilled water. b. A little (500mg) of the sample is shaken well with con. HCl/Con. H_2So_4.	Completely soluble	Absence of Silicate
3.	**Action of Heat:** A small amount (500mg) of the sample is taken in a dry test tube and heated gently at first and then strong.	White fumes evolved	Presence of Carbonate
4.	**Flame Test:** A small amount (500mg) of the sample is made into a paste with con. HCl in a watch glass and introduced into non-luminous part of the Bunsen flame.	No Bluish green flame appeared.	Absence of Copper
5.	**Ash Test:s** A filter paper is soaked into a mixture of sample and dil. cobalt nitrate solution and introduced into the Bunsen flame and ignited	No Yellow colour flame	Absence of Sodium

Preparation of Extract:

5gm of Vediyuppu Kattu is weighed accurately and placed in a 250ml clean beaker and added with 50ml of distilled water. Then it is boiled well for about 10 minutes. Then it is cooled and filtered in a 100ml volumetric flask and made up to 100ml with distilled water.

S.No	EXPERIMENT	OBSERVATION	INFERENCE
	I. Test For Acid Radicals		
1.	**Test For Sulphate:** 2ml of the above prepared extract is taken in a test tube to this added 2ml of 4% dil ammonium oxalate solution.	Cloudy appearance present	Present
2.	**Test For Chloride:** 2ml of the above prepared extracts is added with 2ml of dil-HCl is added until the effervescence ceases off.	No Cloudy appearance present	Absent
3.	**Test For Phosphate:** 2ml of the extract is treated with 2ml of dil.ammonium molybdate solution and 2ml of con.HNo3.	No Yellow appearance present	Absent
4.	**Test For Carbonate:** 2ml of the extract is treated with 2mldil. magnesium sulphate solution.	No Cloudy appearance present	Absent
5.	**Test For Nitrate:** 1gm of the substance is heated with copper turning and concentrated H2So4 and viewed the test tube vertically down.	No Brown gas is evolved	Absent
6.	**Test For Sulphide:** 1gm of the substance is treated with 2ml of con. HCL	No Rotten Egg Smelling gas evolved	Absent

7.	**Test For Fluoride & Oxalate:** 2ml of extract is added with 2ml of dil. Acetic acid and 2ml dil.calcium chloride solution and heated**.**	No Cloudy appearance	Absent
8.	**Test For Nitrite:** 3drops of the extract is placed on a filter paper, on that-2 drops of dil.acetic acid and 2 drops of dil. Benzidine solution is placed.	No Characteristic changes	Absent
9.	**Test For Borate:** 2 Pinches (50mg) of the substance is made into paste by using dil.sulphuric acid and alcohol (95%) and introduced into the blue flame.	Bluish green colour flame not appeared	Absent
	II. Test For Basic Radicals		
1.	**Test For Lead:** 2ml of the extract is added with 2ml of dil.potassium iodine solution.	No Yellow Precipitate is obtained.	Absent
2.	**Test For Copper:** **a.** One pinch(50mg) of substance is made into paste with con. HClin a watch glass and introduced into the non-luminuous part of the flame.	No Blue colour flame No Blue colour precipitate formed.	Absent
3.	**Test For Aluminium:** To the 2ml of extract dil.sodium hydroxide is added in 5 drops to excess.	No Yellow colour appeared	Absent
4.	**Test For Iron:** a.To the 2ml of extract add 2ml of dil.ammonium solution b.To the 2ml of extract 2ml thiocyanate solution and 2ml of con HNo3 is added	Mild Red colour appeared	Present
5.	**Test For Zinc:** To 2ml of the extract dil.sodium hydroxide solution is added in 5 drops to excess and dil.ammonium chloride is added.	White precipitate is not formed	Absent

6.	**Test For Calcium:** 2ml of the extract is added with 2ml of 4% dil.ammonium oxalate solution	Cloudy appearance and white precipitate is obtained	Present
7.	**Test For Magnesium:** To 2ml of extract dil.sodium hydroxide solution is added in drops to excess.	No White precipitate is obtained	Absent
8.	**Test For Ammonium:** To 2ml of extract 1 ml of Nessler's reagent and excess of dil.sodium hydroxide solution are added.	No Brown colour appeared	Absent
9.	**Test For Potassium:** A pinch (25mg) of substance is treated of with 2ml of dil.sodium nitrite solution and then treated with 2ml of dil.cobalt nitrate in 30% dil.glacial acetic acid.	No Yellowish precipitate is obtained.	Absent
10.	**Test For Sodium**: 2 pinches (50mg) of the substance is made into paste by using HCl and introduced into the blue flame of Bunsen burner.	No Yellow colour flame appeared	Absent
11.	**Test For Mercury**: 2ml of the extract is treated with 2ml of dil.sodium hydroxide solution.	No yellow precipitate is obtained	Absent
12.	**Test For Arsenic:** 2ml of the extract is treated with 2ml of dil.sodium hydroxide solution.	No brownish red precipitate is obtained	Absent

	III. Miscellaneous		
1.	**Test For Starch:** 2ml of extract is treated with weak dil.iodine solution	No Blue colour developed	Present
2.	**Test For Reducing Sugar:** 5ml of Benedict's qualitative solution is taken in a test tube and allowed to boil for 2 minutes and added 8 to 10 drops of the extract and again boil it for 2 minutes. The colour changes are noted.	Brick red colour not developed	Absent
3.	**Test For The Alkaloids**: a) 2ml of the extract is treated with 2ml of dil.potassium lodide solution. b) 2ml of the extract is treated with 2ml of dil.picric acid. c) 2ml of the extract is treated with 2ml of dil.phosphotungstic acid.	. No Yellow colour developed	- Absent
4.	**Test For Tannic Acid:** 2ml of extract is treated with 2ml of dil.ferric chloride solution	No black precipitate is obtained	Present
5.	**Test For Unsaturated Compound:** To the 2ml of extract 2ml of dil.Potassium permanganate solution is added.	Potassium permanganate is not decolourised	Absent
6.	**Test For Amino Acid:** 2 drops of the extract is placed on a filter paper and dried well. 20ml of Biurette reagent is added.	No Violet colour developed	Absent

7.	**Test For Type Of Compound:** 2ml of the extract is treated with 2 ml of dil.ferric chloride solution.	No green colour developed No red colour developed No violet colour developed No blue colour developed	Absence of oxy quinole pinephrine and pyro catechol. Anti pyrine, Aliphatic amino acids and meconic acid are absent Apomorphine salicylate and Resorcinol are absent. Morphine, Phenol cresol and hydrouinone are absent

Preliminary Qualitative Phyto chemical tests procedure and Interpretation of results

S.NO	CONSITUENTS	INFERENCE
1.	**Silicate**	Absent
2.	**Carbonate**	Absent
3.	**Copper**	Absent
4.	**Sodium**	Absent
5.	**Sulphate**	Present
6.	**Chloride**	Absent
7.	**Phosphate**	Absent

8.	**Carbonate**	Absent
9.	**Fluoride**	Absent
10.	**Oxalate**	Absent
11.	**Nitrate**	Absent
12.	**Sulphide**	Absent
13.	**Nitrite**	Absent
14.	**Borate**	Absent
15.	**Lead**	Absent
16.	**Copper**	Absent
17.	**Aluminium**	Absent
18.	**Iron**	Present
19.	**Zinc**	Absent
20.	**Calcium**	Present
21.	**Magnesium**	Absent
22.	**Ammonium**	Absent
23.	**Sodium**	Absent
24.	**Mercury**	Absent
25.	**Arsenic**	Absent
26.	**Starch**	Present
27.	**Reducing Sugar**	Absent
28.	**Alkaloids**	Absent
29.	**Tannic acid**	Present
30.	**Unsaturated Compound**	Absent
31.	**Amino acids**	Absent

SOPHISTICATED ANALYTICAL INSTRUMENT FACILITY

IITM, CHENNAI-36

Table-1

Colour characters of Vediyuppu Kattu.

S No	Solvent used	Under ordinary light	Under ultra violet light
1	PM	White	White

PM-Powdered material

Table-2

Physicochemical properties of Vediyuppu Kattu.

S. No.	Parameters	Values obtained (%w/w)	Heavy/ toxic metals	
1	Total ash value	9.66	Lead	BDL
2	Acid insoluble ash	0.84	Cadmium	BDL
3	Water soluble ash	5.26	Mercury	BDL
4	Moisture content	10.47	Arsenic	BDL

BDL-Below detection limit

Table-3

Colour, nature and percent yields of extracts of Vediyuppu Kattu.

S.No.	Extract Solvents	Colour	Nature	% Yield(w/w)	SEM-Micro graph partical size range in micron	pH
1.	Water	White	Solid	48	0.5 – 2 micron	8.9 – 9.1

SOPHISTICATED ANALYTICAL INSTRUMENT FACILITY

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INDUCTIVELY COUPLED PLASMA OPTICAL EMISSION SPECTROMETRY

Introduction

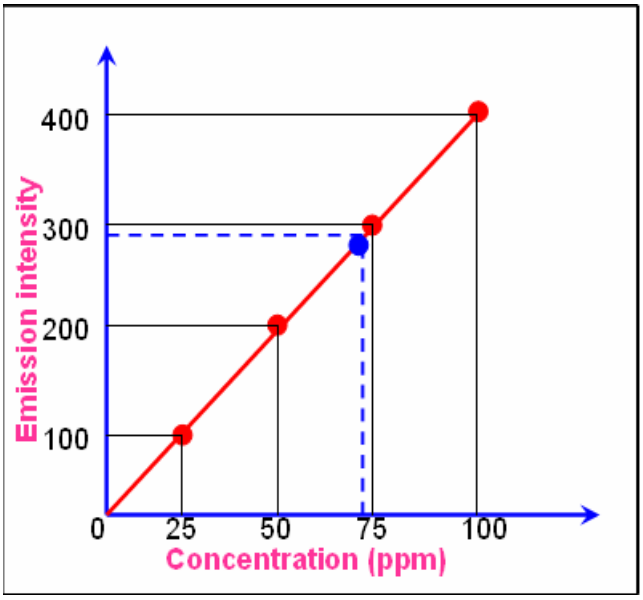
Inductively coupled plasma optical emission spectrometry (ICP-OES), is an analytical technique used for the detection of trace metals. It is a type of emission spectroscopy that uses the inductively coupled plasma to produce excited atoms and ions that emit electromagnetic radiation at wavelengths characteristic of a particular element. The intensity of this emission is indicative of the concentration of the element within the sample.

Principle

A Perkin-Elmer Optima ICP spectrometer is used for routine ICP-OES analysis. First, a high-energy radio frequency field is impinged upon a stream of argon gas. Then, a spark is used to ionize the argon gas, which forms a sustained plasma due to inductive coupling with the high energy radio frequency field and the continuous supply of fresh argon to the plasma torch. This plasma has solutions passed into it in the form of a fine aerosol. The aerosol is dried, the dried particles broken apart, and the individual elements are excited by interaction with the excited state argon in the plasma. As each atom returns to its ground state from the excited state, they emit light at wavelengths characteristic of the elements from which they originate. The emission intensity for each element is monitored for each standard solution and a calibration curve of emission intensity versus element concentration can be constructed.

Extraction of information

Obtaining qualitative information, i.e., what elements are present in the sample, involves identifying the presence of emission at the wavelengths characteristic of the elements of interest. Obtaining quantitative information, i.e., how much of an element is in the sample, can be accomplished using plots of emission intensity versus concentration called calibration curves. Typical calibration graph is illustrated below



Typical ICP Calibration curve

Experimental Procedure: Done at SAIF, IIT Madras, Chennai-36

Perkin Elmer Oplima 5300DV

40 M Hz RF generator

Range: 165-782 nm;

Detection limit: upto ppb level using SCD detector

Sample preparation – Microwave Digestion

- Weigh 0.25g of test sample and transfer into a liner provided with the instrument.
- Slowly add 9ml of Nitric acid or Sulphuric acid such that no piece of sample sticks on the slides.
- Mix thoroughly and allow reacting for few minutes.
- Place the liner in the vessel jacket.
- Close the screw cap hand-tight in clockwise direction.
- Seal the vessel and place in the rotor fixed in microwave.
- Set temperature to 180°C for 5 minutes; hold at 180°C for least 10 minutes.
- Allow the vessels to cool down to a vessel interior temperature below 60°C and to a vessel surface temperature (IR) below 50°C before removing the rotor.
- The digested sample was made upto 100ml with millipore water.
- If visible insoluble particles exist, solution could be filtered through whatmann filter paper.
- Transfer the digested solution into plastic containers and label them properly.

Advantages:

Good general-purpose technique

Good dynamic range

Accommodates organic solvents

Multi-elemental technique

Disadvantages

Cost of the instrument

Limits of detection

Sample volume requirements

Spectral interferences for unknown/complicated matrices

Sample description: Vediyuppu Kattu

Instrument : PERKIN ELMER OPTIMA 5300DV ICP-OES

	Analyte	**Mean**
As	193.696	BDL
Al	308.215	5.231 mg/L
Ca	317.933	BDL
Cd	226.502	BDL
Cu	324.754	BDL
Hg	253.652	BDL
Fe	238.204	BDL
K	766.491	200.528 mg/L
Na	588.995	15.4526 mg/L
Mg	257.610	BDL
P	214.914	8.654 mg/L
Pb	230.204	BDL
S	181.975	2.325 mg/L
Si	251.611	9.564 mg/L

HR SEM-METHODOLOGY:

An SEM is essentially a high magnification microscope, which uses a focussed scanned electron beam to produce images of the sample, both top-down and, with the necessary sample preparation, cross-sections. The primary electron beam interacts with the sample in a number of key ways:-

- Primary electrons generate low energy secondary electrons, which tend to emphasize the topographic nature of the specimen.
- Primary electrons can be backscattered which produces images with a high degree of atomic number (Z) contrast.
- Ionized atoms can relax by electron shell-to-shell transitions, which lead to either X-ray emission or Auger electron ejection. The X-rays emitted are characteristic of the elements in the top few μm of the sample.

SAMPLE PREPARATION:

Sample preparation can be minimal or elaborate for SEM analysis, depending on the nature of the samples and the data required. Minimal preparation includes acquisition of a sample that will fit into the SEM chamber and some accommodation to prevent charge build-up on electrically insulating samples. Most electrically insulating samples are coated with a thin layer of conducting material, commonly carbon, gold, or some other metal or alloy. The choice of material for conductive coatings depends on the data to be acquired: carbon is most desirable if elemental analysis is a priority, while metal coatings are most effective for high resolution electron imaging applications. Alternatively, an electrically insulating sample can be examined without a conductive coating in an instrument capable of "low vacuum" operation.

The SEM is carried out by using FEI-Quanta FEG 200-High Resolution Instrument.

Resolution **:** 1.2 nm gold particle separation on a carbon substrate

Magnification: From a min of 12x to greater than 1, 00,000 X

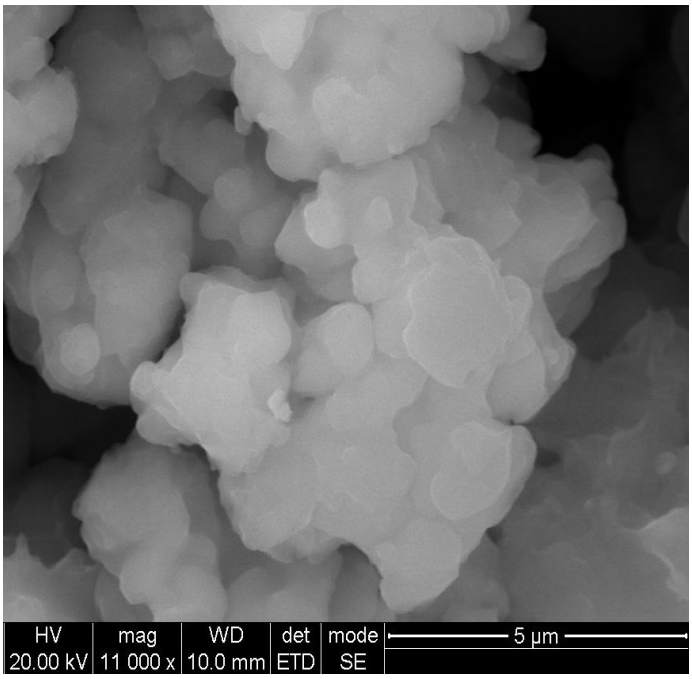
Application : To evaluate grain size, particle size distributions, material homogeneity and **inter** metallic distributions.

Experimental Procedure: Done at SAIF, IIT Madras, Chennai-36

Sample preparation:

Sample preparation can be minimal or elaborate for SEM analysis, depending on the nature of the samples and the data required. Minimal preparation includes acquisition of a sample that will fit into the SEM chamber and some accommodation to prevent charge build-up on electrically insulating samples. Most electrically insulating samples are coated with a thin layer of conducting material, commonly carbon, gold, or some other metal or alloy. The choice of material for conductive coatings depends on the data to be acquired: carbon is most desirable if elemental analysis is a priority, while metal coatings are most effective for high resolution electron imaging applications. Alternatively, an electrically insulating sample can be examined without a conductive coating in an instrument capable of "low vacuum" operation.

PARTICLE PER MILLION SIZE OF VEDIYUPPU KATTU



PARTICLE PER MILLION SIZE 0.5 - 2 MICRON

TOXICOLOGICAL EVALUVATION OF VEDIYUPPU KATTU

ACUTE TOXICITY STUDY OF VEDIYUPPU KATTU

[WHO guidelines, 1993]

Principle:

Acute toxicity was carried out in Swiss albino mice with a single exposure of 10 times of the recommended therapeutic dose of test compound. The study duration was 14 days.

Animal species : Swiss albino mice

Age / Weight / Size : 6 weeks. Mice-20-25 gms.

Gender : Both male and female

Number of Animals : Mice: 20

Acclimatization Period : 7 Days

S.No	Group	No of mice
1	Vehicle control	10 (5 male, 5 female)
2	Toxic dose 10X therapeutic dose (28.8 mg)	10 (5 male, 5 female)

Test Animals

Test animals were obtained from the animal laboratory of the King institute, Chennai and stocked at Animal house, National institute of Siddha, Chennai. All the animals were kept under standard environmental condition (27+ or – 2 degree c).The animals had free access to water and standard pellet diet (Sai meera foods pvt.ltd, Bangalore).The principles of laboratory animal care were followed and the Institutional Animal ethical committee approved the use of animals and the study design. **(1248/ac/09/CPCSEA/4-06/2011 – 6 Dt. 20.12.2011).**

Route of administration:

Oral route was selected, because it is the normal route of clinical administration.

Test substance and vehicle

The test substance (Vediyuppu kattu & Thirikadugu Chooranam) was insoluble in water. In order to obtain and ensure the uniformity in drug distribution, the drug was dissolved by aqueous Tween 80 solution (7 %).

Administration of doses:

The test substance was suspended in aqueous Tween 80 solution (7%), with uniform mixing and it was administered to the groups in a single oral dose. The control groups received equal volume of the vehicle. The animals were weighed before giving the drug. The dose level was calculated according to body weight, and surface area. Since the clinical dose was 800 mg\day. It was converted to animal dose (28.8 mg) and then administered. The principle of laboratory animal care was followed.

Observations

Observations were made and recorded systematically and continuously observed as per the guideline after substance administration. Animals were observed individually. Visual observations included skin changes, alertness, grooming, aggressiveness, sensitivity to sound, touch and pain, restlessness, tremors, convulsion, righting reflex, gripping reflex, pinna reflex, corneal reflex, writhing reflex, papillary reflex, urination, salivation, lacrimation for first 4 hrs, then periodically during the first 24 hrs. Animals were observed for body weight and mortality for 14 days. If animals dye during the period of study, the animals were sacrificed. At the end of the 14^{th} day all animals were sacrificed and necroscopy was done.

Body Weight

Individual weights of animals were determined before the test substance was administered and daily for 14 days. Weight changes were calculated and recorded. At the end of the test surviving animals were weighed and sacrificed.

Results: Vediyuppu Kattu at the dose 28.8mg/animal did not exhibit any mortality in mice.

No behavior changes were noted for the first 4 hours and for the next 24 hours and throughout the study period of 14 days. No weight reduction was noted before and after the acute study duration. Reflexes were found to be normal before and after the study. All other observations were found to be normal before and after the study. In Necropsy, the organs of the animal such as Liver, Heart, Lungs, Pancreas, Spleen, Stomach, Intestine, Kidney, Urinary bladder, Uterus all appeared normal.

LONG TERM TOXICITY STUDY OF VEDIYUPPU KATTU:

Animals	**:**	Male and Female Wistar albino rats
Age	**:**	6-8 weeks
Weight	**:**	150-200 gms
Gender	**:**	Both male and female
Number of animals	**:**	Rat: 40
Acclimatization period	**:**	7 Days
Clinical duration	**:**	90 days

S. No	Group	No of Rats
1	Vehicle control	10 (5male,5 female)
2	1XTherapeutic dose (28.8 mg)	10 (5male,5 female)
3	5XTherapeutic dose (144 mg)	10 (5male,5 female)
4	10XTherapeutic dose(288 mg)	10(5male, 5 female)

Animal source:

Test animals were obtained from the animal laboratory of the King institute, Chennai, and stocked at Animal house, National Institute of Siddha, Chennai. All the animals were kept under standard environmental condition (27+ or – 2 degree c) .The animals had free access to water and standard pellet diet (Sai meera foods pvt.ltd, Bangalore). The principles of laboratory animal care were followed and the Institutional

Animal ethical committee approved the use of animals and the study design. **(1248/ac/09/CPCSEA/4-06/2011 – 6 Dt. 20.12.2011).**

Identification of animal:

By cage number, animal number and individual marking on fur.

Housing & Environment:

The animals were housed in polypropylene cages provided with bedding of husk .Dark and light cycle each of 12 hours.

Administration period:

The period of administration of the test substance to animals depends on the expected period of clinical use. Since the clinical dose of the test drug is 48 days and as per WHO guidelines the administration period is reported to be 90 days.

Dose selection:

The results of acute toxicity studies in Swiss albino mice indicated that **Vediyuppu Kattu** was non toxic and no behavioral changes, mortality was observed. On the basis of these results, the doses were selected for the study as per WHO guidelines.

Preparation and administration of dose:

The test substance Vediyuppu Kattu & Tirikadugu Chooranam was suspended in aqueous twin 80 solution (7%). It was administered to animals at dose levels of 1Xtherapeutic dose (28.8 mg), 5XTherapeutic dose (144 mg) and 10XTherapeutic dose (288 mg).The control animals were administered vehicle only. Administration was by oral (gavage) once a day for 90 days.

METHODOLODY:

Randomization, numbering and grouping of animal:

The animals were randomly divided into four groups for dosing up to 90days. Each group consist of 10 animals (5 per sex in each group) were allowed acclimatization period of 7 days to laboratory conditions prior to the initiation of treatment. Each animal was fur marked with picric acid. The females were nulliparous and non pregnant.

OBSERVATION:

Experimental animals were kept under observation throughout the course of study for the following:

Body weight:

Weight of each rat was recorded on day 1 and at weekly intervals throughout the course of study and at termination to calculate relative organ weights. From the data mean body weights and percent body gain were calculated.

Food and water consumption:

The quantity of food consumed by groups consisting of an animal for different doses were recorded at weekly intervals. Food consumed per animal was calculated for control and the treated dose groups.

Clinical sings

All animals were observed daily for clinical signs. The time of onset, intensity and duration of the symptom if any were recorded.

Mortality:

All animals were observed twice daily for any mortality during entire course of study.

TERMINAL STUDIES:

LABORATORY INVESTIGATIONS:

Following laboratory investigations were carried out on day 91 in animals fasted over night. Blood samples were collected by cardiac puncture using sodium heparin (200 IU\ml) for blood chemistry and potassium EDTA (1.5 mg/ml) for hematology anticoagulant. Blood sample were centrifuged at 3000 r. p .m for 10 minutes.

Hematological investigations:

Hematological parameters were determined by manual methods at the Tami Nadu Veterinary & Animal Sciences University, Chennai.

Biochemical investigations:

The effect of Vediyuppu Kattu on certain biochemical parameters were examined and compared with those of the control group. The blood samples collected with heparinized bottles were centrifuged at 5000 rpm for 10 minutes to obtain clear serum for the following investigation. Glucose was estimated using commercial Glucose estimation kit (Span Diagnostics) by the method of Barham *et al.,* (1972) and Tenscher. *et al.,* (1971).Haemoglobin PCV,RBC,Erythocyte count was estimated by Hemocytometer method of Ghai (1995). Total Leukocyte Count was estimated by Hemocytometer method of John (1972).Total (bilirubin test kid- malloy& evelyn 1937) direct and indirect bilirubin were determined.Alkaline phosphatase,Alanine amino tranferase (ALT) and Aspartate amino transferase (AST) were measured by using ALT and AST test kit (kind & king) .Total protein TP concentration was determined.Albumin was determined based on its reaction with bromocresol green (binding method) .Urea was determined according to urease – berthelot method and plasma creatinine was estimated using jaffe rection. Results of biochemical investigations conducted on day 91 revealed significant changes in the values of different parameters studied when compared with those of respective controls.

Statistical analysis done for the above said biochemical investigations did not reveal any significant difference in values between the control groups and test groups stating that the provided test drug is non toxic.

NECROPSY:

All the animals were sacrificed on day 91 under ether anesthesia. Necropsy of all animals was carried out and the weights of the organs including liver, kidneys, brain, stomach, heart, and lungs were recorded.

HISTOPATHOLOGY:

Tissue samples of organs from control and treated animals were preserved in 10% formalin for preparation of sections using microtome. The organs included liver, kidneys, heart, lungs and stomach of the animals were preserved and they were subjected to histo pathological examination.

The organ pieces (3-5 micron) were fixed in 10% formalin for 24 hours and washed in running water for 24 hours .Samples were dehydrated in tissue processor and then cleaned in benzene to remove absolute alcohol. Embedding was done by passing the cleared sample through three cups containing molten paraffin at 50 degree c and then a cubical block of paraffin made by the L moulds it was followed by microtome and the slides were stained with haematoxylin–eosin stain .Stained sections of each organ were examined under light microscope at high (40X) power magnification. All the histo pathological slides were prepared at Dept of. Veterinary Pathology, Tamil Nadu Veterinary & Animal Science University,

Results:

GROUP - I – Control

Liver: Multifocal mononuclear cell infiltration.

Lung: Pulmonary congestion, peribronchial and interstitial mononuclear cell infiltration.

Kidney: Shows normal appearing tubules and glomeruli.

Stomach: Shows gastric mucosa with glands lined by tall columnar cell.

Heart: No abnormality detected.

Spleen: No abnormality detected.

Impression: Normal study.

GROUP - II – 1 X Therapeutic Dose (28.8 mg)

Liver: Shows central veins with radiating cords of hepatocytes, portal trials and kupfer cells appear normal.

Lungs: Shows bronchioles, alveoli , the alveolar septa with normal histology

Kidney: Shows normal appearing tubules and glomeruli.

Stomach: Shows gastric mucosa with glands lined by tall columnar cell

Heart: No abnormality detected.

Spleen: No abnormality detected.

Impression: Normal study.

GROUP - III – 5 X Therapeutic Dose (144 mg)

Liver: Multifocal mononuclear cell infiltration.

Lung: Pulmonary congestion, peribronchial and interstitial mononuclear cell infiltration.

Kidney: Mild tubular epithelial cell degeneration.

Stomach: Non – glandular stomach; Neutrophilic and mononuclear cell infiltration in the lamina propria.

Heart: No abnormality detected.

Spleen: No abnormality detected.

Impression: Normal study

GROUP - IV – 10 X Therapeutic Dose (288 mg)

Liver: Multifocal mononuclear cell infiltration and mild periportal mononuclear cell infiltration.

Lung: Pulmonary congestion, peribronchial and interstitial mononuclear cell infiltration.

Kidney: Tubular epithelial cell degeneration.

Stomach: Non – glandular stomach; Neutrophilic and mononuclear cell infiltration in the lamina propria.

Heart: No abnormality detected.

Spleen: Haemosiderosis.

Impression: Normal study.

The histopathological studies did not reveal any abnormalities in the animals in both control and test groups stating that the drug is non toxic.

Hematological parameters after 90 days treatment with *Vediyuppu Kattu* in rats.

Parameter	Group I	Group II	Group III	Group IV
RBC ($X10^6$/µL)	8.20±0.63	8.72±0.80	9.22±1.10	9.03±0.52
HB (%)	14.16±1.24	15.10±1.22	15.84±0.99	15.12±1.18
Leukocyte ($X10^3$/µL)	7.37±1.32	7.50±1.31	6.89±0.93	6.62±0.54
Platelets ($X10^3$/µL)	840.4±80.42	816.25±87.74	837.1±87.14	780.76±70.32
MCV (gl)	51.24±5.08	50.16±4.32	51.60±5.41	56.14±4.86
N	23.22±2.16	22.53±3.70	24.74±3.62	25.18±3.11
L	69.82±6.15	67.46±6.55	66.24±6.28	66.12±3.18
M	2.0±0.34	2.0±0.35	2.24±0.28	2.32±0.26
E	1.42±0.54	1.61±0.60	1.28±0.42	1.00±0.11
B	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
ESR(mm)	1±00	1±00	1±00	1±00
PCV	42.10±1.02	44.6±3.7	44.04±2.2	45±1.8

Values are mean ± S.E.M. (Dunnett's test). *P<0.05; **P<0.01. N=6.

Lipid Profile

Parameter	Group I	Group II	Group III	Group IV
Total cholestrol(mg/dL)	75.28±4.4	78.10±7.6	82.20±8.10	82.64±6.2
HDL(mg/dL)	114.5±0.47	161.57±0.38**	150.39±0.49**	140.02±0.37**
LDL(mg/dL)	32.40±4.71	95.62±0.64	71.70±3.52**	86.43±0.57**
VLDL(mg/dl)	16.32±2.42	15.27±2.24	16.10±1.44	15.06±1.11
Triglycerides (mg/dl)	66.56±1.50	83.29±1.04**	118.30±1.02**	113.15±1.05**
Blood glucose(mg/dl)	90.77±0.48	81.16±0.32**	58.56±0.45**	52.00±1.00**

Values are mean ± S.E.M. (Dunnett's test). *P<0.05; **P<0.01. *Vs. control*

Effect of *Vediyuppu Kattu* biochemical parameters.

Parameter	Group I	Group II	Group III	Group IV
Total Bilirubin (µmol/l)	17.12±2.16	16.70±1.10	15.12±1.15	20.66±1.35
Bilirubin direct (µmol/l)	13.64±1.21	11.74±1.04	10.78±0.86	10.12±0.73*
ALP (U/L)	60.11±3.12	85.11±2.62**	102.10±1.92**	105.45±2.31**
SGOT (U/L)	84.02±6.2	90.16±8.45	87.52±6.31	96.2±7.52
SGPT(U/L)	71.72±7.2	74.31±6.2	82.2±7.10	93.5±7.50
Total Protein(g/dl)	8.21±0.25	7.55±0.23	7.55±0.72	7.18±0.61
Albumin(g/dl)	2.62±0.18	2.54±0.17	2.52±0.16	2.65±0.10
Globulin(g/dl)	6.82±0.28	5.18±0.28**	4.78±0.22**	4.73±0.30**
Urea(mg/dL)	6.35±0.25	7.30±0.19*	7.58±0.25**	8.85±0.22**
Creatinine (mg/dL)	0.17±0.04	0.22±0.05	0.50±0.05**	0.52±0.04**
Uric acid (mg/dL)	1.92±0.07	2.12±0.08	1.39±0.08**	1.29±0.07**
Na m.mol	148.00±1.10	147.36±1.12	146.28±0.54	145.20±0.50
K m.mol	6.12±0.88	5.90±1.00	5.68±0.78	5.82±0.69
Cl m.mol	100.05±4.26	101.27±5.51	99.82±4.72	100.14±5.10

Values are mean ± S.E.M. (Dunnett's test). *P<0.05; **P<0.01. *Vs. control*

Lab Parameters Before Treatment

						D.C %						Blood Sugar (mg/dl)			Serum Cholesterol (mg/dl)				
S.No	OPD/ IPD No	Hb g/dl	T.Rbc Mil/cu	ESR ½ - 1hr	T.Count Cells/cu	P	L	M	E	B	Plt Lak	F	PP	R	Total	HDL	LDL	VLDL	TGL
1.	C 73051	16.2	5.1	2/6	8800	54	45	-	1	-	2.4	-	-	103	199	63	84	52	256
2.	C73216	15.2	5.1	2/6	5100	37	62	-	1	-	1.9	86			220	36	133	51	253
3.	C 73371	14.3	4.9	4/8	8900	67	32	-	1	-	3.1	-	-	117	221	38	127	56	279
4.	C 73442	14.0	4.9	4/8	11000	60	38	-	2	-	3.2	78	-	-	135	36	78	21	103
5.	C73666	14.1	4.8	2/6	5300	65	28	-	7	-	2.6	80	-	-	203	34	109	36	162
6.	C 73671	16.0	5.1	2/6	11000	60	34	-	6	-	2.4	85	-	-	190	54	38	33	120
7.	C 73826	14.2	5.0	6/12	7700	60	36	-	4	-	2.9	81	-	-	209	55	42	66	124
8.	C 73822	12.4	3.8	8/18	9300	54	40	2	4	-	3.2	99	-	-	178	38	56	48	66
9.	C 73988	16.3	5.4	2/4	7400	59	39	-	2	-	2.5	79	-	-	210	42	56	60	875
10.	C 74492	17.1	4.7	2/4	8500	65	29	-	6	-	2.8	96	-	-	247	68	120	66	325
11.	C 75067	14.4	4.9	2/10	10600	50	44	2	4	-	1.9	101	-	-	203	46	145	42	263
12.	C 76023	13.2	4.7	6/14	6800	65	30	-	5	-	2.6	94	-	-	158	35	106	17	85
13.	C 75948	14.4	4.6	4/8	4500	63	32	-	5	-	1.8	76	-	-	165	40	110	15	75
14.	C 76327	15.9	4.8	4/8	10500	68	30	-	2	-	2.2	101	-	-	164	30	124	10	50
15.	C 76329	14.4	4.6	4/8	6400	58	40	-	2	-	1.8	105	-	-	236	49	174	13	66
16.	C 76330	14.8	4.7	4/8	6100	44	52	-	4	-	2.2	94	-	-	179	30	139	10	50
17.	C 76467	13.8	5.2	4/8	8200	62	35	-	3	-	3.1	-	-	108	188	35	119	34	170
18.	C 75970	15.5	5.4	18/36	5500	44	50	1	5	-	1.4	-	-	103	125	30	87	8	40
19.	C 77289	10.9	4.0	6/14	6700	45	49	-	6	-	2.6	82	-	-	182	30	142	10	50
20.	C 77311	10.7	3.5	4/10	6800	59	36	-	5	-	2.6	83	-	-	179	30	129	20	100

Lab Parameters Before Treatment

						D.C %						Blood Sugar (mg/dl)			Serum Cholesterol (mg/dl)				
S.No	OPD/ IPD No	Hb g/dl	T.Rbc Mil/cu	ESR ½ - 1hr	T.Count Cells/cu	P	L	M	E	B	Plt Lak	F	PP	R	Total	HDL	LDL	VLDL	TGL
21.	C 77487	12.0	3.9	2/6	5600	50	43	2	5	-	3.9	98	-	-	180	31	135	14	72
22.	C 77703	14.4	4.3	2/3	107000	64	31	-	5	-	2.7	-	-	110	151	30	85	36	183
23.	C 77718	13.3	4.3	4/8	5500	60	33	1	6	-	1.5	88	-	-	156	37	103	16	81
24.	C 77719	12.1	3.7	2/4	6500	68	29	-	3	-	2.1	87	-	-	197	30	153	14	74
25.	C 84062	14.4	4.5	4/8	6600	62	33	-	5	-	2.5	79	-	-	155	24	143	21	105
26.	C 84584	14.4	4.7	2/4	5800	55	36	1	8	-	2.3	-	-	121	149	30	103	69	345
27.	C 86714	9.8	3.6	2/16	7500	62	33	-	5	-	2.6	100	-	-	132	24	78	16	81
28.	C 86747	12.4	4.1	4/8	6000	65	32	-	3	-	2.4	83	-	-	143	26	80	22	114
29.	C 75922	16.6	3.9	6/17	9500	43	46	1	10	-	3.0	84	-	-	149	30	126	12	63
30.	C 95104	12	4.5	6/18	5300	50	40	2	8	-	2.1	101	-	-	124	30	42	67	239
31.	C 73542	12.3	4.0	6/14	9400	65	26	-	9	-		89	-	-	185	38	119	28	138
32.	C 74676	13.5	4.6	2/8	7500	61	34	-	5	-	3.2	91	-	-	167	39	111	47	185
33.	C 75699	13.4	4.7	6/12	5800	59	35	1	5	-	2.5	68	-	-	210	45	129	136	182
34.	C 93380	13.3	4.7	8/18	10300	60	34	-	6	-	2.9	106	-	-	139	32	100	28	141
35.	C 64949	14.8	5.0	2/8	6400	73	21	-	5	-	2.4	91	104	-	180	41	88	39	197
36.	C 95029	12.4	4.3	6/20	6800	57	33	1	9	-	2.4	97	-	-	110	27	35	10	50
37.	C 94846	13.4	4.6	12/24	6700	49	47	-	4	-	2.0	92	-	-	114	27	88	19	97
38.	C 93333	16.5	5.2	2/10	6700	64	32	-	4	-	2.4	97	131	-	129	30	77	34	170
39.	C 95846	10	3.4	2/12	7000	55	40	-	5	-	3.6	93	-	-	205	43	97	31	157
40.	D 01526	15.4	4.7	2/4	8500	54	34	-	2	-	2.9	80	-	-	198	37	87	20	101

Lab Parameters Before Treatment																
		Blood Group	RFT (mg/dl)			LFT (mg/dl)			Serum (gm/dl)					(IU/L)		
S.NO	OPD/ IPD No	Rh Type	Urea	Creat	U.acid	T.Bil	Dir	Ind	Total	Alb	Glb	Cal	Phos	OT	PT	ALKP
1.	C 73051	O -	21	0.6	6.6	0.6	0.4	0.2	7.6	5.5	2.1	-	-	33	41	155
2.	C73216	O +	15	0.6	5.1	0.8	0.5	0.3	7.3	5.2	2.1	-	-	36	38	180
3.	C 73371	O +	29	0.7	9.7	0.6	0.4	0.2	6.9	5.2	1.7	-	-	29	37	144
4.	C 73442	O +	17	0.6	3.9	0.5	0.3	0.2	7.9	5.5	2.4	-	-	18	14	159
5.	C73666	O +	23	0.6	-	0.6	0.3	0.3	7.8	5.4	2.4	-	-	23	41	183
6.	C 73671	O +	38	0.8	-	0.6	0.3	0.3	8.1	5.8	2.3	-	-	20	17	187
7.	C 73826	A +	24	0.7	-	0.5	0.3	0.2	7.7	5.0	2.7	-	-	35	31	116
8.	C 73822	B +	16	0.7	-	0.4	0.2	0.2	7.8	4.6	3.2	-	-	20	15	193
9.	C 73988	B +	24	0.6	-	0.6	0.3	0.3	7.1	4.0	3.1	-	-	29	30	163
10.	C 74492	A +	28	0.7	-	0.9	0.6	0.3	6.7	3.5	3.2	-	-	34	39	154
11.	C 75067	A +	14	0.5	-	0.4	0.2	0.2	7.9	4.9	3.0	-	-	23	25	152
12.	C 76023	O +	29	0.8	-	1.0	0.4	0.6	6.3	4.6	1.7	-	-	23	25	164
13.	C 75948	B +	16	0.5	-	0.6	0.2	0.4	6.4	4.9	1.5	-	-	24	26	170
14.	C 76327	A +	20	0.6	-	0.9	0.4	0.5	6.2	4.9	1.3	-	-	30	28	184
15.	C 76329	B +	21	0.7	-	1.4	0.6	0.8	6.9	4.9	2.0	-	-	18	20	185
16.	C 76330	B +	24	0.8	-	0.8	0.2	0.6	6.9	4.0	2.9	-	-	13	15	183
17.	C 76467	A +	21	0.7	-	0.4	0.2	0.2	7.7	5.1	2.6	9.9	2.8	28	30	204
18.	C 75970	A +	16	0.5	-	1.1	0.5	0.6	6.7	4.7	2.0	-	-	19	22	189
19.	C 77289	O +	18	0.5	5.5	0.4	0.2	0.2	7.0	5.0	2.0	-	-	32	33	168
20.	C 77311	AB +	20	0.6	-	0.4	0.2	0.2	7.1	4.4	2.7	-	-	13	15	170

Lab Parameters Before Treatment																
		Blood Group	RFT (mg/dl)			LFT (mg/dl)			Serum (gm/dl)					(IU/L)		
S.NO	OPD/ IPD No	Rh Type	Urea	Creat	U.acid	T.Bil	Dir	Ind	Total	Alb	Glb	Cal	Phos	OT	PT	ALKP
21.	C 77487	O +	23	0.7	6.0	0.4	0.2	0.2	7.0	5.0	2.0	-	-	27	30	194
22.	C 77703	O +	17	0.5	6.0	0.6	0.3	0.3	7.2	4.8	2.4	-	-	25	29	222
23.	C 77718	B +	19	0.6	6.7	0.6	0.2	0.4	7.0	4.9	2.1	-	-	18	20	138
24.	C 77719	A +	28	0.8	6.0	0.9	0.3	0.6	6.8	4.0	2.8	-	-	34	24	152
25.	C 84062	O +	24	0.7	4.2	0.4	0.2	0.2	5.8	3.4	2.4	-	-	22	23	180
26.	C 84584	B +	24	0.7	6.2	0.6	0.2	0.4	7.6	5.0	2.6	10.6	2.9	12	14	132
27.	C 86714	A +	20	0.6	4.0	0.6	0.2	0.4	7.0	5.0	2.0	11	3.0	19	20	160
28.	C 86747	A +	14	0.4	5.9	0.5	0.2	0.3	6.0	4.0	2.0	10.5	3.0	17	18	150
29.	C 75922	O +	25	0.8	5	0.5	0.2	0.3	6.9	4.3	2.6	-	-	18	20	135
30.	C 95104	B +	19	0.6	5.6	0.4	0.2	0.2	6.2	3.8	2.4	-	-	22	23	160
31.	C 73542	O +	20	0.7	2.9	0.6	0.4	0.2	7.1	5.1	2.0	10.7	3.9	27	26	146
32.	C 74676	O +	18	0.7	-	0.4	0.2	0.2	6.1	4.6	1.5	-	-	18	20	136
33.	C 75699	O +	23	0.7	-	0.6	0.2	0.4	6.9	4.5	2.4	-	-	11	13	156
34.	C 93380	O +	16	0.5	3.7	0.5	0.2	0.3	6.5	3.6	2.9	11	3.1	25	26	246
35.	C 64949	A1 -	38	1.0	2.9	0.7	0.3	0.4	7.1	4.7	2.4	10.6	2.9	17	19	216
36.	C 95029	O +	22	0.6	4.1	0.5	0.2	0.3	5.2	3.2	2.0	-	-	18	19	142
37.	C 94846	O +	20	0.6	3.5	0.5	0.2	0.3	7.4	4.0	3.4	10.4	3.0	17	18	184
38.	C 93333	A1 +	25	0.6	3.1	0.4	0.2	0.2	6.6	3.7	2.9	11.0	3.1	26	28	195
39.	C 95846	O +	19	0.5	3.0	0.4	0.2	0.2	6.6	4.0	2.6	11	3.0	36	27	166
40.	D 01526	A +	16	0.5	3.6	0.4	0.2	0.2	7.0	4.0	3.0	10.6	2.8	12	13	160

Lab Parameters Before Treatment										
S.NO	OPD / IPD No	URINE						Motion		
		AlB	Sug	Pus	Epi	B.S	B.P	Ova	Cyst	Occult Blood
1.	C 73051	NIL	NIL	1 - 2	2 - 3	NIL	NEG	NIL	NIL	NIL
2.	C73216	NIL	NIL	2 – 3	2 - 3	NIL	NEG	NIL	NIL	NIL
3.	C 73371	NIL	NIL	3 – 4	3 – 4	NIL	NEG	NIL	NIL	NIL
4.	C 73442	NIL	NIL	2 – 3	2 – 3	NIL	NEG	NIL	NIL	NIL
5.	C73666	NIL	NIL	2 – 4	2 – 4	NIL	NEG	NIL	NIL	NIL
6.	C 73671	NIL	NIL	2 – 3	2 – 3	NIL	NEG	NIL	NIL	NIL
7.	C 73826	NIL	NIL	1 – 2	1 – 2	NIL	NEG	NIL	NIL	NIL
8.	C 73822	NIL	NIL	1 – 2	1 – 2	NIL	NEG	NIL	NIL	NIL
9.	C 73988	NIL	NIL	1 – 2	1 – 2	NIL	NEG	NIL	NIL	NIL
10.	C 74492	TRACE	NIL	1 – 2	1 – 2	NIL	NEG	NIL	NIL	NIL
11.	C 75067	NIL	NIL	1 – 2	2 – 3	NIL	NEG	NIL	NIL	NIL
12.	C 76023	NIL	NIL	2 – 3	2 – 3	NIL	NEG	NIL	NIL	NIL
13.	C 75948	NIL	NIL	2 – 3	2 - 3	NIL	NEG	NIL	NIL	NIL
14.	C 76327	NIL	NIL	1 – 2	1 – 2	NIL	NEG	NIL	NIL	NIL
15.	C 76329	NIL	NIL	0 - 1	1 – 2	NIL	NEG	NIL	NIL	NIL
16.	C 76330	NIL	NIL	1 – 2	0 - 1	NIL	NEG	NIL	NIL	NIL
17.	C 76467	NIL	NIL	2 – 3	5 - 6	NIL	NEG	NIL	NIL	NIL
18.	C 75970	NIL	NIL	2 – 3	2 - 3	NIL	NEG	NIL	NIL	NIL
19.	C 77289	NIL	NIL	2 – 4	2 – 4	NIL	NEG	NIL	NIL	NIL
20.	C 77311	NIL	NIL	1 – 2	1 – 2	NIL	NEG	NIL	NIL	NIL

Lab Parameters Before Treatment										
S.NO	OPD / IPD No	URINE						Motion		
		AlB	Sug	Pus	Epi	B.S	B.P	Ova	Cyst	Occult Blood
21.	C 77487	NIL	NIL	1 – 2	2 - 3	NIL	NEG	NIL	NIL	NIL
22.	C 77703	NIL	NIL	1 – 2	2 - 3	NIL	NEG	NIL	NIL	NIL
23.	C 77718	NIL	NIL	1 – 2	1 – 2	NIL	NEG	NIL	NIL	NIL
24.	C 77719	NIL	NIL	2 – 4	2 - 4	NIL	NEG	NIL	NIL	NIL
25.	C 84062	NIL	NIL	1 – 2	2 - 3	NIL	NEG	NIL	NIL	NIL
26.	C 84584	NIL	NIL	2 – 4	2 - 4	NIL	NEG	NIL	NIL	NIL
27.	C 86714	NIL	NIL	3 - 4	3 - 4	NIL	NEG	NIL	NIL	NIL
28.	C 86747	NIL	NIL	2 – 3	2 - 3	NIL	NEG	NIL	NIL	NIL
29.	C 75922	NIL	NIL	2 - 3	1 – 2	NIL	NEG	NIL	NIL	NIL
30.	C 95104	NIL	NIL	2 – 4	2 - 4	NIL	NEG	NIL	NIL	NIL
31.	C 73542	NIL	NIL	4 – 5	5 - 6	NIL	NEG	NIL	NIL	NIL
32.	C 74676	NIL	NIL	1 – 2	1 – 2	NIL	NEG	NIL	NIL	NIL
33.	C 75699	NIL	NIL	0 - 1	2 - 4	NIL	NEG	NIL	NIL	NIL
34.	C 93380	NIL	NIL	2 – 4	2 - 4	NIL	NEG	NIL	NIL	NIL
35.	C 64949	NIL	NIL	2 – 4	2 - 4	NIL	NEG	NIL	NIL	NIL
36.	C 95029	NIL	NIL	1 – 2	2 - 3	NIL	NEG	NIL	NIL	NIL
37.	C 94846	NIL	NIL	4 – 5	4 – 5	NIL	NEG	NIL	NIL	NIL
38.	C 93333	NIL	NIL	2 - 3	1 – 2	NIL	NEG	NIL	NIL	NIL
39.	C 95846	NIL	NIL	2 – 4	2 - 4	NIL	NEG	NIL	NIL	NIL
40.	D 01526	NIL	NIL	2 – 4	2 - 4	NIL	NEG	NIL	NIL	NIL

Lab Parameters After Treatment

						D.C %						Blood Sugar (mg/dl)			Serum Cholesterol (mg/dl)				
S.No	OPD/ IPD No	Hb g/dl	T.Rbc Mil/cu	ESR ½ - 1hr	T.Count Cells/cu	P	L	M	E	B	Plt Lak	F	PP	R	Total	HDL	LDL	VLDL	TGL
1.	C 73051	16.2	5.1	4/10	9700	52	40	3	5	-	2.0	86	101	-	142	28	71	30	154
2.	C73216	16.4	5.2	2/6	9500	56	38	3	3		2.3	88	106		150	32	70	33	160
3.	C 73371	13.3	4.5	2/4	9400	74	20	6	-	-	3.1	-	156	-	208	26	97	68	315
4.	C 73442	16.2	5.4	2/4	6100	40	49	2	9	-	2.7	87	-	-	177	30	141	37	174
5.	C73666	13.8	4.8	2/4	5500	60	35	-	5	-	2.7	84	-	-	160	34	101	23	116
6.	C 73671	14.3	4.7	20/40	10500	61	31	-	8	-	2.4	77	-	-	131	27	102	31	156
7.	C 73826	14.1	5.1	8/16	8100	59	25	1	15	-	3.2	88	-	-	145	30	102	30	164
8.	C 73822	17.1	5.2	6/12	4600	65	33	-	2	-	1.5	102	-	-	191	35	82	137	185
9.	C 73988	17.4	5.8	2/4	7500	61	36	-	3	-	2.8	74	-	-	193	36	169	55	278
10.	C 74492	16.9	4.8	6/14	7800	58	33	-	9	-	3.0	82	-	-	210	45	128	68	342
11.	C 75067	16.2	5.1	8/18	8800	60	32	1	7	-	2.0	82	-	-	132	25	88	52	264
12.	C 76023	13.6	4.7	2/12	8100	66	22	2	10	-	2.5	104	-	-	138	24	76	21	108
13.	C 75948	14.7	4.4	2/6	6100	58	34	-	3	-	2.6	94	-	-	152	32	96	34	174
14.	C 76327	16.9	5.1	2/4	10400	74	23	-	3	-	2.7	-	-	109	140	31	60	25	128
15.	C 76329	14.2	4.7	4/10	7300	55	40	-	5	-	2.0	96	163		146	33	68	28	144
16.	C 76330	15.1	4.9	2/10	10200	63	33	-	4	-	3.0	-	-	113	200	34	131	26	130
17.	C 76467	12.2	4.5	6/18	9300	62	33	-	5	-	3.3	80	-	-	132	26	86	41	208
18.	C 75970	16.5	5.6	2/4	4300	49	41	4	9	-	1.5	77	-	-	126	27	50	24	123
19.	C 77289	12.9	4.4	10/22	6200	55	42	-	3	-	2.3	98	-	-	152	34	68	54	272
20.	C 77311	14.3	3.9	6/12	5500	54	41	-	5	-	2.3	90	-	-	182	36	120	32	112

Lab Parameters After Treatment

						D.C %						Blood Sugar (mg/dl)			Serum Cholesterol (mg/dl)				
S.No	OPD/ IPD No	Hb g/dl	T.Rbc Mil/cu	ESR ½ - 1hr	T.Count Cells/cu	P	L	M	E	B	Plt Lak	F	PP	R	Total	HDL	LDL	VLDL	TGL
21.	C 77487	17.6	5.2	2/4	9700	66	22	-	8	4	3.8	101	-	-	168	34	106	36	184
22.	C 77703	17.2	5.3	4/8	11100	64	32	-	4	-	3.4	-	-	116	123	28	98	48	244
23.	C 77718	16.3	5.2	2/6	6600	63	30	1	6	-	1.3	102	-	-	146	30	102	19	97
24.	C 77719	13.1	3.5	2/4	4200	66	30	-	4	-	1.4	81	-	-	200	34	160	30	90
25.	C 84062	15.1	4.6	2/4	6300	65	30	-	5	-	2.3	77	-	-	146	38	100	23	115
26.	C 84584	14.6	4.7	2/4	5800	55	36	1	8	-	2.3	-	-	121	149	30	103	69	345
27.	C 86714	10.6	3.9	4/10	7800	60	35	-	5	-	2.6	92	-	-	108	30	52	16	83
28.	C 86747	12.5	4.0	2/10	6600	65	32	-	3	-	2.9	104	-	-	188	42	82	53	266
29.	C 75922	17.3	5.5	2/6	5200	52	39	1	8	-	2.1	85	-	-	191	30	102	21	108
30.	C 95104	11.5	4.4	2/6	6000	62	33	-	5	-	2.2	106	-	-	231	38	101	22	110
31.	C 73542	12.8	3.9	6/12	7600	41	49	1	10	-	-	83	-	-	165	30	70	19	98
32.	C 74676	12.9	4.6	2/4	8800	64	30	-	6	-	-	-	-	91	169	27	98	44	220
33.	C 75699	13.1	4.5	2/6	5500	50	40	2	8	-	1.8	70	-	-	169	34	80	58	290
34.	C 93380	11.5	4.7	2/4	11200	62	33	-	5	-	2.5	-	123	-	138	33	72	37	185
35.	C 64949	15.2	5.2	2/4	4800	60	35	-	-	5	1.6	91	-	-	158	34	78	40	485
36.	C 95029	11.8	4.6	3/6	9500	50	45	-	5	-	3.0	95	-	-	176	32	102	39	198
37.	C 94846	11.9	4.6	6/12	7100	43	45	-	12	-	2.4	104	-	-	177	36	82	34	173
38.	C 93333	16.3	5.2	2/4	4900	55	40	-	5	-	2.2	88	-	-	154	32	76	12	63
39.	C 95846	12.7	3.3	4/6	7100	55	38	-	7	-	3.2	86	-	-	225	43	112	16	83
40.	D 01526	16	4.8	2/4	8400	56	32	-	2	-	3.2	84	-	-	200	36	88	24	90

Lab Parameters After Treatment															
		RFT (mg/dl)			LFT (mg/dl)			Serum (gm/dl)					(IU/L)		
S.NO	OPD/ IPD No	Urea	Creat	U.acid	T.Bil	Dir	Ind	Total	Alb	Glb	Cal	Phos	OT	PT	ALKP
1.	C 73051	16	0.8	4.7	0.4	0.2	0.2	6.9	4.5	2.4	-	-	20	24	164
2.	C73216	15	0.7	4.5	0.5	0.3	0.2	6.6	4.5	2.1	-	-	20	21	154
3.	C 73371	25	0.8	8.6	0.4	0.2	0.2	6.8	3.1	3.6	-	-	50	48	146
4.	C 73442	25	0.7	6.7	1.0	0.5	0.5	6.6	4.0	2.6	-	-	15	16	176
5.	C73666	21	0.7	-	0.6	0.2	0.4	6.4	4.2	2.2	-	-	20	25	194
6.	C 73671	25	0.8	-	0.6	0.2	0.4	6.9	3.9	3.0	-	-	7	8	243
7.	C 73826	17	0.6	-	0.5	0.3	0.2	7.0	5.0	2.0	-	-	22	24	213
8.	C 73822	14	0.5	-	0.4	0.2	0.2	6.8	4.8	2.0	-	-	4.-0	26	196
9.	C 73988	29	0.8	6.0	0.7	0.3	0.4	6.9	4.0	2.9	-	-	29	30	160
10.	C 74492	21	0.6	5.0	0.4	0.2	0.2	7.6	3.4	4.2	-	-	27	28	180
11.	C 75067	21	0.6	5.8	1.3	0.6	0.7	7.2	4.1	3.1	12	3.6	14	15	142
12.	C 76023	18	0.5	5.4	0.5	0.2	0.3	5.6	3.6	2.0	11	3.0	11	12	156
13.	C 75948	18	0.5	5.7	0.5	0.2	0.3	7.3	5.2	2.1	11.7	3.2	18	19	166
14.	C 76327	15	0.5	5.8	1.5	0.6	0.9	6.2	4.2	2.0	10.0	3.1	28	29	170
15.	C 76329	23	0.7	8.6	0.5	0.2	0.3	7.7	5.1	2.6	11.4	3.4	22	23	164
16.	C 76330	31	0.9	6.1	0.6	0.3	0.3	7.1	5.1	2.0	11.9	3.5	36	28	195
17.	C 76467	24	0.7	3.0	0.6	0.2	0.4	7.0	5.0	2.0	11.0	3.2	10	11	145
18.	C 75970	14	0.6	4.7	1.4	0.9	0.5	7.4	4.4	3.0	10.0	3.2	25	26	165
19.	C 77289	24	0.8	5.9	0.5	0.2	0.3	7.2	5.2	2.0	11.3	3.0	29	30	178
20.	C 77311	14	0.4	3.0	0.3	0.1	0.2	6.7	4.7	2.0	10	3	21	31	166

Lab Parameters After Treatment															
		RFT (mg/dl)			**LFT** (mg/dl)			**Serum** (gm/dl)					(IU/L)		
S.NO	**OPD/ IPD No**	**Urea**	**Creat**	**U.acid**	**T.Bil**	**Dir**	**Ind**	**Total**	**Alb**	**Glb**	**Cal**	**Phos**	**OT**	**PT**	**ALKP**
21.	**C 77487**	**14**	**0.4**	**5.9**	**0.6**	**0.2**	**0.4**	**7.0**	**5.0**	**2.0**	**11.0**	**3.0**	**11**	**12**	**150**
22.	**C 77703**	**14**	**0.4**	**5.9**	**0.5**	**0.2**	**0.3**	**5.5**	**3.2**	**2.3**	**10.2**	**3.1**	**15**	**16**	**156**
23.	**C 77718**	**14**	**0.4**	**6.5**	**0.5**	**0.2**	**0.3**	**7.0**	**5.0**	**2.0**	**10.9**	**3.0**	**22**	**19**	**168**
24.	**C 77719**	**14**	**0.4**	**6.2**	**0.4**	**0.2**	**0.2**	**6.5**	**4.5**	**2.0**	**12**	**3.5**	**19**	**20**	**165**
25.	**C 84062**	**19**	**0.5**	**3.2**	**0.4**	**0.2**	**0.2**	**6.0**	**3.4**	**2.6**	**10.6**	**3.2**	**17**	**19**	**149**
26.	**C 84584**	**20**	**0.6**	**5.0**	**0.5**	**0.2**	**0.3**	**5.6**	**2.8**	**2.8**	**10.8**	**2.9**	**13**	**15**	**146**
27.	**C 86714**	**14**	**0.4**	**3.1**	**0.4**	**0.2**	**0.2**	**6.1**	**4.1**	**2.0**	**11.5**	**3.1**	**12**	**15**	**182**
28.	**C 86747**	**23**	**0.7**	**3.4**	**0.6**	**0.2**	**0.4**	**5.7**	**3.4**	**2.4**	**10.6**	**3.6**	**13**	**15**	**145**
29.	**C 75922**	**15**	**0.6**	**4.9**	**0.6**	**0.2**	**0.4**	**7.4**	**4.0**	**3.4**	**10.1**	**3.9**	**19**	**20**	**168**
30.	**C 95104**	**14**	**0.6**	**4.1**	**0.6**	**0.2**	**0.4**	**6.7**	**4.3**	**2.4**	**10.8**	**2.9**	**16**	**18**	**170**
31.	**C 73542**	**22**	**0.7**	**2.3**	**0.4**	**0.2**	**0.2**	**6.8**	**4.2**	**2.6**	**-**	**-**	**29**	**30**	**196**
32.	**C 74676**	**21**	**0.7**	**6.0**	**0.6**	**0.2**	**0.4**	**5.6**	**3.1**	**2.5**	**-**	**-**	**15**	**16**	**150**
33.	**C 75699**	**14**	**0.4**	**2.6**	**0.7**	**0.3**	**0.4**	**7.4**	**4.8**	**2.6**	**10.4**	**3.0**	**13**	**14**	**149**
34.	**C 93380**	**14**	**0.5**	**3.2**	**0.8**	**0.3**	**0.5**	**6.0**	**3.9**	**2.1**	**10.7**	**3.0**	**12**	**14**	**152**
35.	**C 64949**	**15**	**0.5**	**4.2**	**0.4**	**0.2**	**0.2**	**6.3**	**4.1**	**2.2**	**10.7**	**2.7**	**49**	**42**	**215**
36.	**C 95029**	**15**	**0.4**	**4.1**	**0.5**	**0.2**	**0.3**	**5.1**	**3.0**	**2.1**	**10**	**2.9**	**28**	**30**	**194**
37.	**C 94846**	**15**	**0.5**	**4.3**	**0.6**	**0.2**	**0.4**	**6.2**	**4.0**	**2.2**	**10.9**	**3.4**	**20**	**22**	**180**
38.	**C 93333**	**14**	**0.5**	**3.3**	**0.5**	**0.2**	**0.3**	**6.3**	**4.2**	**2.1**	**10.2**	**3.3**	**24**	**26**	**185**
39.	**C 95846**	**16**	**0.6**	**3.0**	**0.5**	**0.2**	**0.3**	**5.9**	**3.3**	**2.6**	**10.0**	**2.8**	**26**	**28**	**183**
40.	**D 01526**	**16**	**0.4**	**3.8**	**0.4**	**0.2**	**0.2**	**7.2**	**4.1**	**3.1**	**10**	**2.6**	**14**	**16**	**170**

Lab Parameters After Treatment										
S.NO	OPD / IPD No	URINE						Motion		
		AlB	Sug	Pus	Epi	B.S	B.P	Ova	Cyst	Occult Blood
1.	C 73051	NIL	NIL	2 – 4	2 – 4	NIL	NEG	NIL	NIL	NIL
2.	C73216	NIL	NIL	1 - 2	2 - 3	NIL	NEG	NIL	NIL	NIL
3.	C 73371	NIL	NIL	2 – 4	2 – 4	NIL	NEG	NIL	NIL	NIL
4.	C 73442	NIL	NIL	1 - 2	2 - 3	NIL	NEG	NIL	NIL	NIL
5.	C73666	NIL	NIL	1 – 3	3 – 4	NIL	NEG	NIL	NIL	NIL
6.	C 73671	NIL	NIL	2 – 3	2 - 3	NIL	NEG	NIL	NIL	NIL
7.	C 73826	NIL	NIL	1 – 2	1 - 2	NIL	NEG	NIL	NIL	NIL
8.	C 73822	NIL	NIL	2 – 3	2 - 3	NIL	NEG	NIL	NIL	NIL
9.	C 73988	NIL	NIL	1 – 2	1 - 2	NIL	NEG	NIL	NIL	NIL
10.	C 74492	NIL	NIL	3 – 4	2 - 3	NIL	NEG	NIL	NIL	NIL
11.	C 75067	NIL	NIL	2 – 4	2 – 4	NIL	NEG	NIL	NIL	NIL
12.	C 76023	NIL	NIL	2 – 4	2 – 4	NIL	NEG	NIL	NIL	NIL
13.	C 75948	NIL	NIL	1 – 2	1 - 2	NIL	NEG	NIL	NIL	NIL
14.	C 76327	NIL	NIL	2 – 4	2 – 4	NIL	NEG	NIL	NIL	NIL
15.	C 76329	NIL	NIL	2 – 4	2 – 4	NIL	NEG	NIL	NIL	NIL
16.	C 76330	NIL	NIL	2 – 3	2 - 3	NIL	NEG	NIL	NIL	NIL
17.	C 76467	NIL	NIL	2 – 4	2 – 4	NIL	NEG	NIL	NIL	NIL
18.	C 75970	NIL	NIL	1 – 2	2 - 3	NIL	NEG	NIL	NIL	NIL
19.	C 77289	NIL	NIL	1 - 2	1 - 2	NIL	NEG	NIL	NIL	NIL
20.	C 77311	NIL	NIL	2 – 4	2 – 4	NIL	NEG	NIL	NIL	NIL

Lab Parameters After Treatment										
S.NO	OPD / IPD No	URINE						Motion		
		AlB	Sug	Pus	Epi	B.S	B.P	Ova	Cyst	Occult Blood
21.	C 77487	NIL	NIL	1 – 2	1 – 2	NIL	NEG	NIL	NIL	NIL
22.	C 77703	NIL	NIL	1 – 2	1 – 2	NIL	NEG	NIL	NIL	NIL
23.	C 77718	NIL	NIL	1 – 2	1 – 2	NIL	NEG	NIL	NIL	NIL
24.	C 77719	NIL	NIL	1 – 2	1 – 2	NIL	NEG	NIL	NIL	NIL
25.	C 84062	NIL	NIL	2 – 3	2 – 3	NIL	NEG	NIL	NIL	NIL
26.	C 84584	NIL	NIL	1 – 2	1 – 2	NIL	NEG	NIL	NIL	NIL
27.	C 86714	NIL	NIL	8 – 10	10 - 12	NIL	NEG	NIL	NIL	NIL
28.	C 86747	NIL	NIL	4 – 5	2 – 3	NIL	NEG	NIL	NIL	NIL
29.	C 75922	NIL	NIL	1 – 2	1 – 2	NIL	NEG	NIL	NIL	NIL
30.	C 95104	NIL	NIL	2 – 4	2 - 4	NIL	NEG	NIL	NIL	NIL
31.	C 73542	NIL	NIL	1 – 2	2 - 3	NIL	NEG	NIL	NIL	NIL
32.	C 74676	NIL	NIL	1 – 2	3 – 4	NIL	NEG	NIL	NIL	NIL
33.	C 75699	NIL	NIL	1 – 2	1 – 2	NIL	NEG	NIL	NIL	NIL
34.	C 93380	NIL	NIL	10 – 15	8 - 10	NIL	NEG	NIL	NIL	NIL
35.	C 64949	NIL	NIL	2 – 4	3 – 6	NIL	NEG	NIL	NIL	NIL
36.	C 95029	NIL	NIL	2 – 3	2 – 3	NIL	NEG	NIL	NIL	NIL
37.	C 94846	NIL	NIL	2 – 4	2 - 4	NIL	NEG	NIL	NIL	NIL
38.	C 93333	NIL	NIL	2 – 4	2 - 4	NIL	NEG	NIL	NIL	NIL
39.	C 95846	NIL	NIL	2 – 4	2 - 4	NIL	NEG	NIL	NIL	NIL
40.	D 01526	NIL	NIL	1 – 2	1 – 2	NIL	NEG	NIL	NIL	NIL

BILLROTH INSTITUTE OF GASTROENTEROLOGY

(Centre of Excellence for Gastrointestinal & Liver Diseases)

BILLROTH HOSPITALS

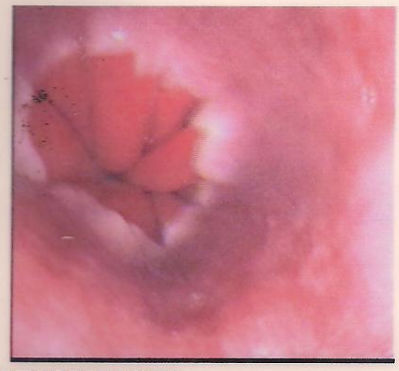
43, Lakshmi Talkies Road, Shenoy Nagar, Chennai - 600 030

E - mail : drvjegan@hotmail.com Tel : 26440020, 26441777, 26442090, 2644070 Telefax : 26442999

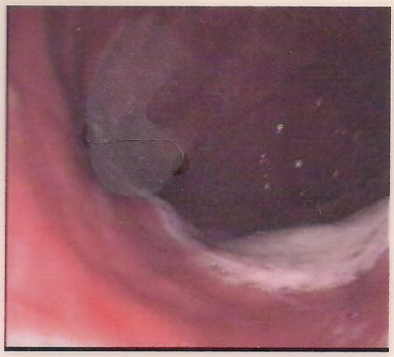
ADVANCED VIDEO - GASTROSCOPY, COLONOSCOPY, E.R.C.P., LAPAROSCOPY & LASER CENTRE

Patient 's Name :MR ARUMUGAM **Age :36 Years** **Sex : M(OP)**

Referred by :Dr.V.Jeganathan.,M.S.,MAMS.,FAMS.,FICS.,FACS.,MACG.,FRSH.,FAGE.



OESOPHAGUS



FUNDUS

BODY

OESOPHAGO - GASTRO - DUODENOSCOPY - REPORT

OESOPHAGUS	:	Normal
O-G JUNCTION	:	AT 38 cms. Lax.
STOMACH	:	
FUNDUS	:	Normal
BODY	:	Erosions seen.
ANTRUM	:	Normal. Biopsy for H. pylori taken.
PYLORUS	:	Deformed.
DUODENUM	:	
I PART	:	Healing ulcers, inflamed mucosa.
II PART	:	Normal

IMPRESSION /CONCLUSION :

DUODENAL ULCERS (HEALING).

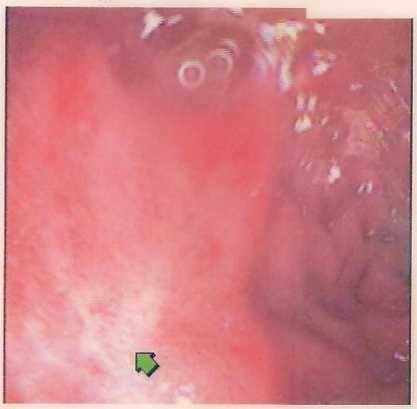
DUODENITIS.

GASTRITIS.

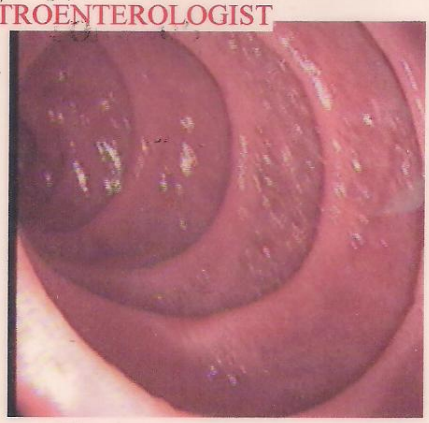
DATE .05\12\11

DR. V. HEMA VIJAYALAKSHMI.,
DCH.,DNB(PAED).,D.M.,
GASTROENTEROLOGIST

ANTRUM



D1



D2

CHETTINAD HOSPITAL AND RESEARCH INSTITUTE
OLD MAHABALIPURAM ROAD, PADUR
KANCHI PURAM DIST-603103

DEPT OF SURGERY

Patient Name:	**MR ARUMUGAM**	**Ref By:**	NIS
Patient ID:	867.090042126	**Date:**	13-09-2012 10:02:44 AM
Age/Sex:	36/male	**Procedure:**	ENDOSCOPY

GASTRO-DUODENOSCOPY REPORT

Findings

Cricopharynx is normal

Esophagus shows normal mucosa

GE junction is at 36 cm

Fundus, body, and antrum of stomach are normal

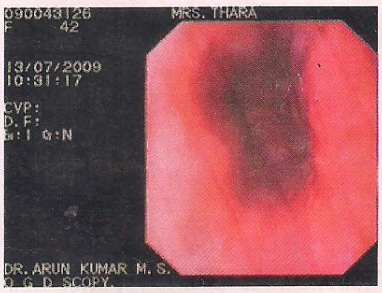
DI is normal

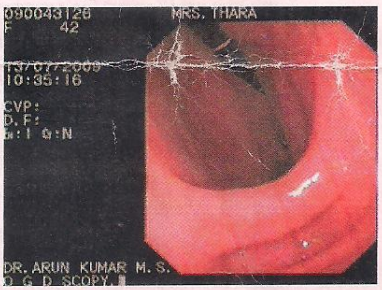
DII is normal

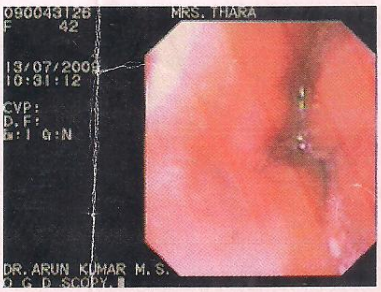
Conclusions

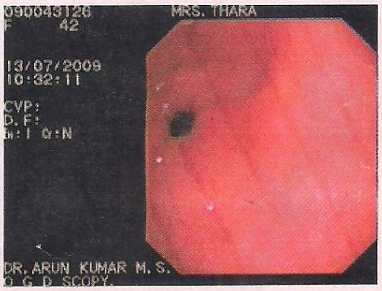
Normal Gastro-duodenoscopy

DR.ARUNKUMAR.K., MBBS.MS.,









KM SPECIALITY HOSPITAL
RKSHANMUGAM SALAI,
KK NAGAR, CHENNAI-78.

Patient Name	Mrs.Mariammal	Age / Sex	35/F
PatientID	000298	Visit Date	09/12/2011
Examiner :	DR.M.MANIMARAN.M.D.,D.M	Ref.Doctor :	DR.K.BALASUBRAMANIAN.

UGI SCOPY REPORT

INSTRUMENT: VIDEO GASTROSCOPE - OLYMPUS CV60.

INDICATION : ULCER LIKE DYSPEPSIA.

SEDATION : NOT USED.

PATIENT COOPERATION : GOOD.

BIOPSY : NOT TAKEN.

OESOPHAGUS : NORMAL.

OGJ : NORMAL.

STOMACH

FUNDUS / CARDIA : NORMAL.

BODY NORMAL.

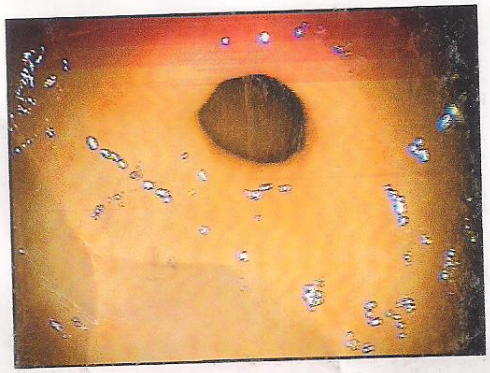
ANTRUM / PYLORUS : EROSIONS SEEN.

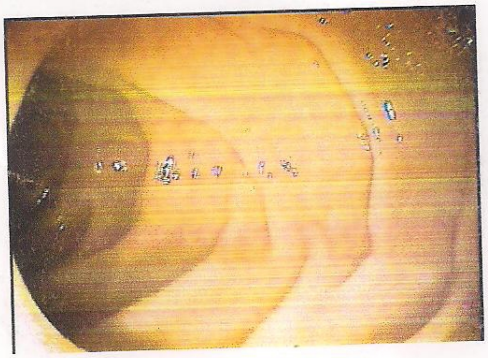
DUODENUM

PART-1 : NORMAL.

PART-2 : NORMAL.

IMPRESSION: ANTRAL GASTRITIS.





DR.M.MANIMARAN.M.D.,D.M.,
CONSULTANT GASTROENTEROLOGIST.
9884824618.

LAKSHA HOSPITAL

MYLAPORE, CHENNAI.

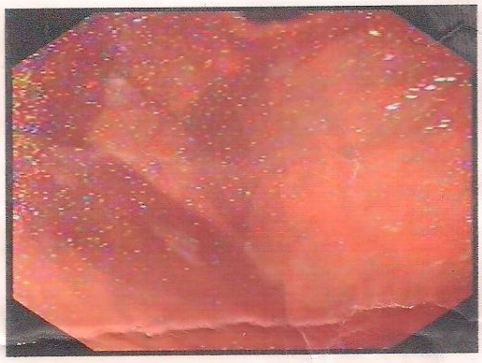
Patient Name	Mrs.Mariammal	Age / Sex	35/Female
Patient ID	00000107	Visit Date	17/09/2012
Referred By	NIS	Consulted By	
Done By	DR.ARUN KUMAR	Medication	

Oesophagogastro-Duodendoscopy

Upper Esophagus - Normal

Middle Esophagus - Normal

Lower Esophagus - Normal



OG Junction - Normal

Fundus - Normal

Body - Normal

Antrum - Normal

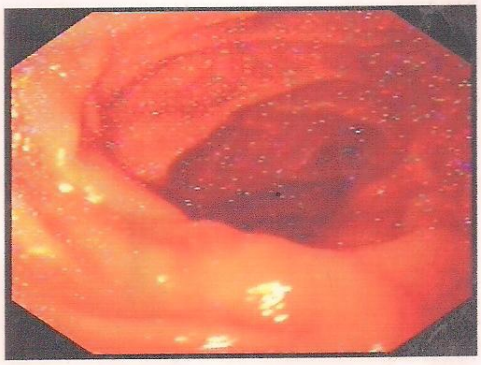
Pylorus - Normal

Duodenum 1st Part - Normal

Duodenum 2nd Part - Normal

FINAL IMPRESSION:

NORMAL STUDY.



CHETTINAD HOSPITAL AND RESEARCH INSTITUTE
OLD MAHABALIPURAM ROAD, PADUR
KANCHI PURAM DIST-603103

DEPT OF SURGERY

Patient Name:	MRS.UMA MAHESWARI	**Ref By:**	
Patient ID:	028.090043126	**Date:**	17-08-2011 10:07:20 AM
Age/Sex:	40 /Female	**Procedure:**	ENDOSCOPY

GASTRO-DUODENOSCOPY REPORT

Findings

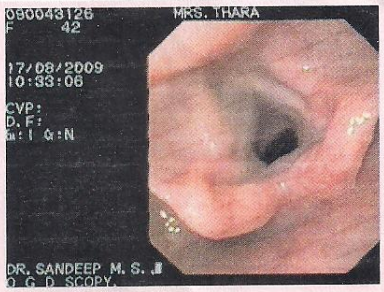
Cricopharynx is normal
Esophagus shows normal mucosa
GE junction is at 36 cm.
Fundus, body of stomach are normal. Antrum is inflammed.
Duodenal bulb is normal
DII is normal

Conclusions

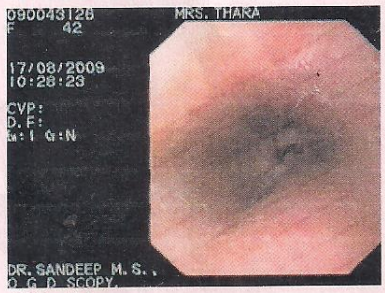
ANTRAL GASTRITIS

U. Sandeep

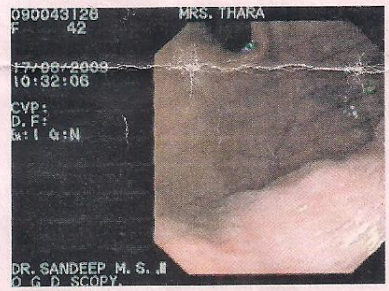
DR.U.SANDEEP,M.S.,



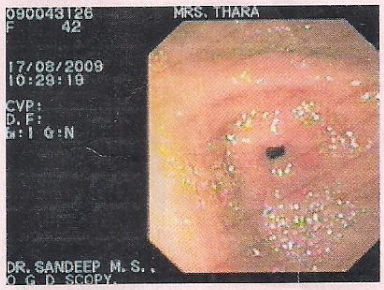
CRICOPHARYNX



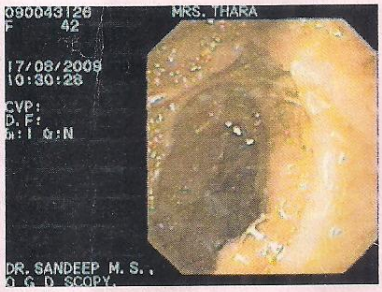
OG JN



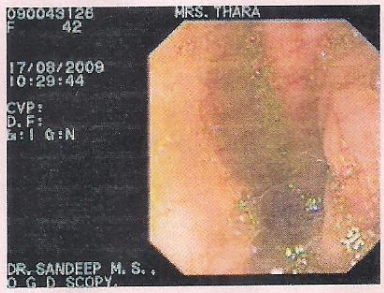
FUNDUS



ANTRUM



DII



DI

CHENNAI INSTITUTE OF DIGESTIVE DISEASES &
VIDEO ENDOSCOPY CENTRE, K.S. HOSPITAL,
442, Poonamallee High Road, Chennai-10. Ph: 26412960,26412326

Patient Name	MRS.UMA MAHESWARI / 40 Yrs	Sex	FEMALE
Patient Id	10138	Visit Date	15.10.2012

Report on UPPER G.I. ENDOSCOPY

Referred By :

Instrument : AOHUA VME - 98.

Premedic : Nil

Findings : Oesophagus :Normal. LOS apppears slightly tight.

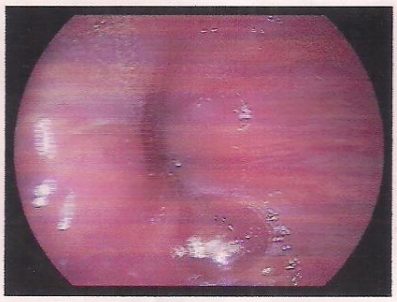
: Stomach : Fudus shows mucosal fold partly around the cardia (status fundo plication). Mucosa normal.

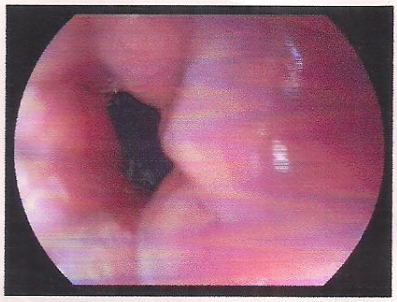
: Duodenum : Part 1 : Normal.

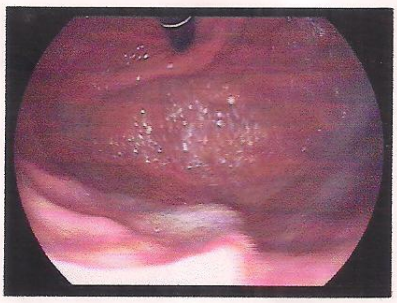
: Part 2 : Normal.

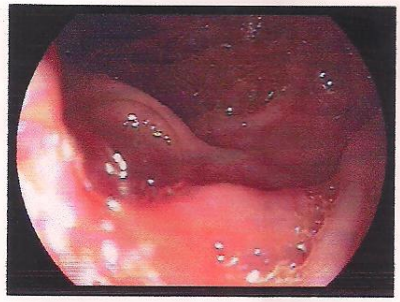
IMPRESSION :NORMAL STATUS FUNDO PLICATION.

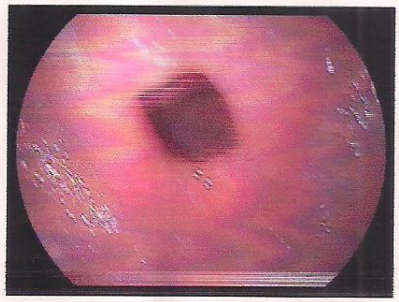
DR.S.RAJANIKANTH MD DM.,
ENDOSCOPIST.

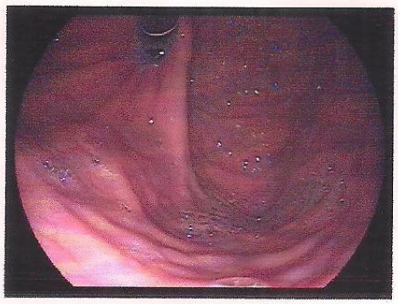












BILLROTH INSTITUTE OF GASTROENTEROLOGY

(Centre of Excellence for Gastrointestinal & Liver Diseases)

BILLROTH HOSPITALS

43, Lakshmi Talkies Road, Shenoy Nagar, Chennai - 600 030

E-mail : drvjegan@hotmail.com Tel : 26440020, 26441777, 26442090, 2644070 Telefax : 26442999

ADVANCED VIDEO - GASTROSCOPY, COLONOSCOPY, E.R.C.P., LAPAROSCOPY & LASER CENTRE

Patient 's Name : Mr. VENKATESH Age : 30 Years Sex : M(OP)

Referred by :Dr.V.Jeganathan.,M.S.,MAMS.,FAMS.,FICS.,FACS.,MACG.,FRSH.,FAGE.

OESOPHAGUS

FUNDUS

BODY

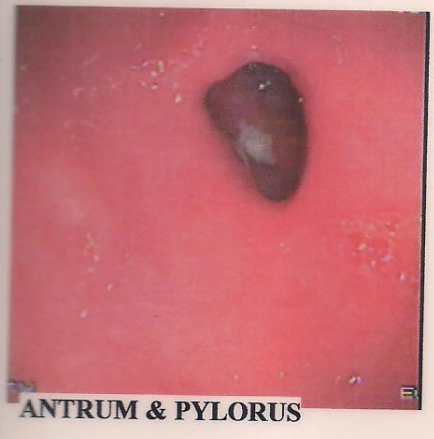
OESOPHAGO - GASTRO - DUODENOSCOPY - REPORT

OESOPHAGUS	:	Normal
O-G JUNCTION	:	AT 38 cms
STOMACH	:	
FUNDUS	:	Normal
BODY	:	Inflamed.
ANTRUM	:	Erosions seen.
PYLORUS	:	Deformed.
DUODENUM	:	
I PART	:	Two ulcers seen in the inferior wall with surrounding edematous mucosa.
II PART	:	Normal

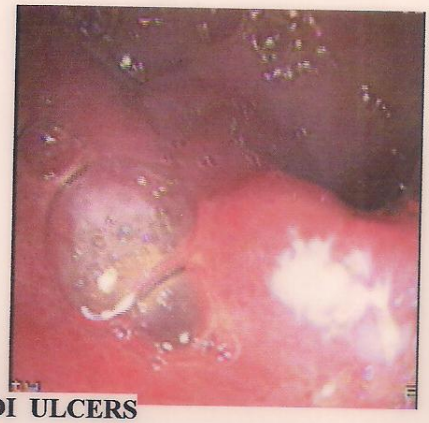
IMPRESSION /CONCLUSION :
MULTIPLE DUODENAL ULCER WITH DUODENITIS.
GASTRITIS.

DATE :20/04/2012

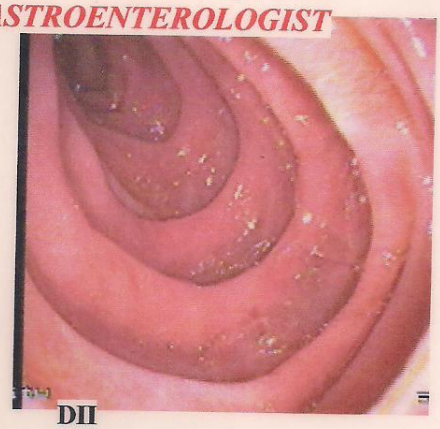
Dr. V. HEMA VIJAYALAKSHMI.,
DCH., DNB (PAED.)., D.M.
GASTROENTEROLOGIST



ANTRUM & PYLORUS



DI ULCERS



DII

sree balaji medical college & hospital

Patient Name:	Mr. VENKATESH	**Ref By:**	GM
Patient ID:	793	**Date:**	29-09-2012 11:40:20 AM
Age/Sex:	31/Male	**Procedure:**	UGI

GASTRO-DUODENOSCOPY REPORT

Findings

Cricopharynx is normal

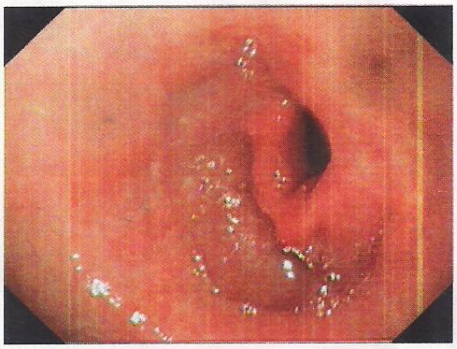
Esophagus shows normal mucosa

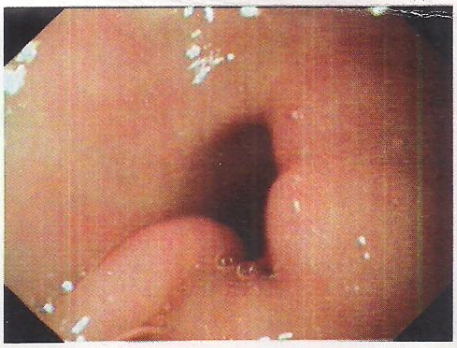
GE junction is at 38 cm

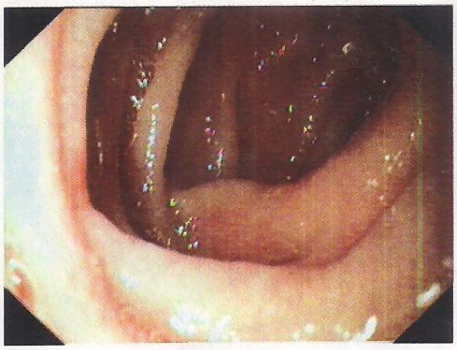
Fundus, body, and antrum of stomach are normal

Duodenal bulb is normal

DII is normal







Conclusions

Normal Gastro-duodenoscopy

DEPT. OF GASTRO ENTROLOGY
Sree Balaji Medical College Hospital
Chromepet, Chennai-600 044.

SRM MEDICAL COLLEGE HOSPITAL AND RESEARCH CENTRE

S.R.M Nagar, Potheri Village, Kattankalathur-603203

UpperGIEndoscopy Report

GENERAL SURGERY

Patient Name: JUBITHA

Contact #:		**Age/Gender:**	27Yrs, Female
Patient ID:	31974	**Visit Date:**	3/14/2012
Referred Dr:	DR.RAJA	**Consulted Dr:**	DR.RAJA
Procedure:	UGI SCOPY	**Medication:**	10% LIDOCAINE SPRAY

Esophagus : Normal, Lax LES, OGJ @ 35cm

Stomach

- **Fundus** : Normal
- **Body** : Inflamed
- **Antrum** : Normal
- **Pylorus** : Normal

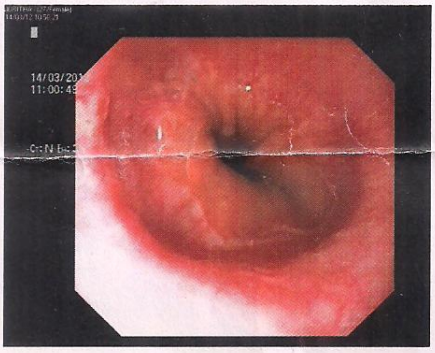
Duodenum

- **D1** : Normal
- **D2** : Normal

Impression : GASTRITIS

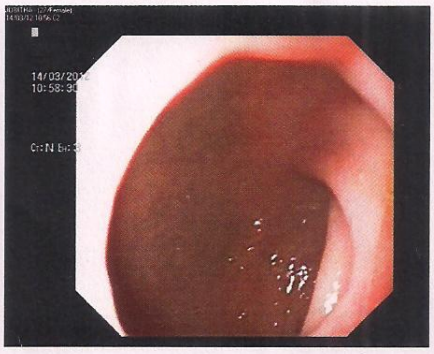
Pylorus & Antrum Normal

Body : Inflamed

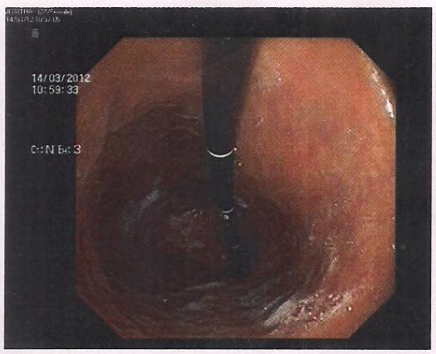


D2: Normal

D1: Normal



Fundus: Normal



Visit Summary

GERD

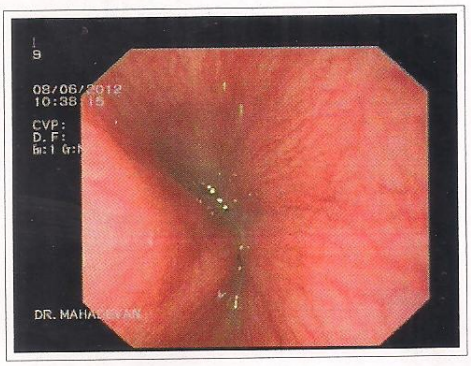
DR.RAJA

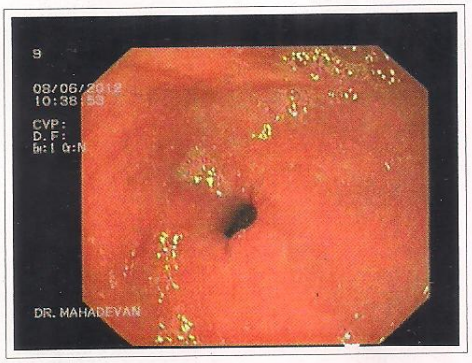
CHETTINAD SUPER SPECIALITY HOSPITAL

RAJIV GANDHI ROAD, KELAMBAKKAM, KANCHIPURAM

Patient Id:	090493613
Name:	*MRS.ZUBIDHA*
Age/Sex:	31 / f
Study Date:	8-10-2012
Referral Doctor Name:	GEN SURGERY

UPPER GI ENDOSCOPY REPORT





Esophagus :

Mucosa : Normal

Z line at : 37 cms

Stomach

Fundus : Normal

Body : Normal

Antrum : Normal

Duodenum

D1 : Normal

D2 : Normal

Impression : **Normal Mucosal Study**

Dr. B. Mahadevan, MD, DM (Gastro)

Consultant Gastroenterologist

The Tamil Nadu Dr. M.G.R. Medical University

69, Anna Salai, Guindy, Chennai-600 032

This Certificate is awarded to ~~Mr/Ms~~/Dr.....S. SENTHIL KARUNAKARAN.....

for participating as a ~~Resource Person~~ / Delegate in the VII Workshop

on **"Research Methodology & Biostatistics"**

for AYUSH Post-Graduates & Researchers

organized by the Department of Siddha

The Tamil Nadu Dr. M.G.R. Medical University

from 6th Feb. 2012 to 10th Feb. 2012.

DR. MAYILVAHANAN NATARAJAN
M.S.Orth. M.Ch.Orth. (L'pool) Ph.D. (Orth. Onco.) F.R.C.S. (Eng) D.Sc.
7th VICE CHANCELLOR

Dr. R. SRILAKSHMI, DCH, Ph.D.
REGISTRAR

Dr. N. KABILAN, M.D. (Siddha)
READER, DEPT. OF SIDDHA

NATIONAL INSTITUTE OF SIDDHA

(An Autonomous Body under Department of AYUSH)
Ministry Of Health & Family Welfare, Government of India

Tambaram Sanatorium, Chennai - 600 047
Tel : 044-22411611 Fax : 044-22381314
E-mail : nischennaisiddha@yahoo.co.in
Website : www.nischennai.org

Name: Dr. S. SENTHIL KARUNAKARAN. 32101206

Title: Preclinical and clinical study on "Vaayu kunmam" (Gastritis) and the drug of choice is "Vediyuppu kattu"

No. NIS/IEC/2011/3/06 - 24/12/2011

DECSION

Opinion of the Institutional Ethics Committee – Please Check one
✓ Approval _____ Modifications required prior to approval (Please specify one space below) _____ Disapproval K. Manickavasakam (Dr. K. MANICKAVASAKAM) Member Secretary Date of review: _____ Signed: _____ (Please print name) Dr.V.SUBRAMANIAN chair person (Please delee as appropriate, Chairperson, Secretary)
Modifications needed Modification given to candidate
The research proponent is hereby informed that the Institutional Ethics Committee will require the following: 1. All adverse drug reactions (ADRs) that are both serious and unexpected to be reported promptly to the IEC within 7 working days 2. The progress report to be submitted to the IEC atleast annually 3. Upon completion of the study, a final study status report needs to submitted to the IEC

IAEC PROTOCOL NO : 1248/ac/09/CPCSEA/H-06/2011-6

20/12/2011

CERTIFICATE

This is certify that the project title..... Preclinical and clinical study on "Vaayukunmam" (Gastritis) and the drug of choice is "Vediyuppu kottu" ....

has been approved by the IAEC.

Prof. Dr. K. Manickavasakam
Name of Chairman/Member Secretary IAEC:

Dr. B. Jayachandran Dare
Name of CPCSEA nominee:

Signature with date

K. Thamizhan
Chairman/Member Secretary of IAEC:

CPCSEA nominee:

(Kindly make sure that minutes of the meeting duly signed by all the participants are maintained by Office)

சித்த மருத்துவ மைய ஆராய்ச்சி நிலையம், அரும்பாக்கம், சென்னை - 600 106
सिध्द केन्द्रीय अनुसंधान संस्थान, अरुम्बाक्कम, चेन्नई- 600106
Siddha Central Research Institute
Arignar Anna Govt. Hospital Campus, Arumbakkam, Chennai-600 106
(Central Council for Research in Siddha, Department of AYUSH,
Ministry of Health & Family Welfare, Govt. of India)
Phone: 044-2621 49 25,
Tele Fax: 044 26214809,
E.mail: crisiddha @ gmail.com
Web: www.crisiddha.tn.nic.in

06.02.2012

CERTIFICATE

Certified that the minerals submitted for identification by Dr.S.Senthil Karunakaran, II year Maruthuvam, National Institute of Siddha, Tambaram Sanatorium, Chennai-47 are identified as Vediyuppu – Potassium Nitrate and Seenam – Aluminium Potassium Sulphate.

(R.Shakila)
Research Officer (Chemistry)

(K.Meenakshi Sundara Moorthy)
Asst. Director- In charge

NATIONAL INSTITUTE OF SIDDHA, CHENNAI – 600047

CERTIFICATE OF BOTANICAL AUTHENTICITY

Certified that the following plant drugs used in the Siddha formulation **Vediyuppu Kattu** (Internal) for the management of **Vaayu Kunmam** (Gastritis) taken up for Post Graduation Dissertation studies by **Dr.S.Senthil Karunakaran**, M.D.(S), II year Department of Maruthuvam, 2011-12, are identified and authenticated through Visual inspection / Organoleptic characters / Experience, Education &Training/ Morphology / Micromorphology / Microscopical/ Taxonomical methods.

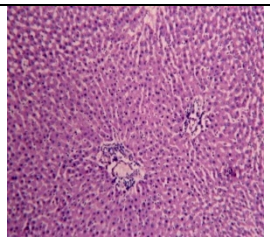
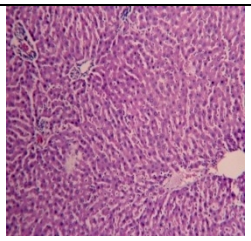
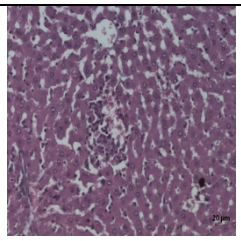
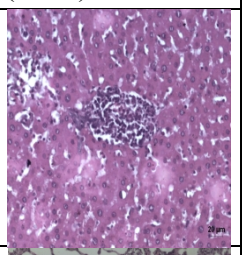
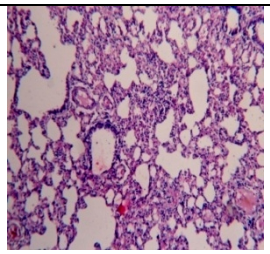
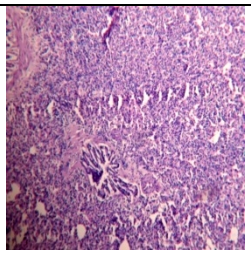
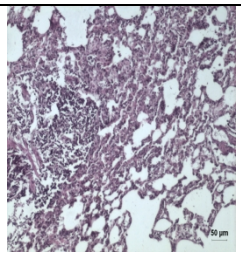
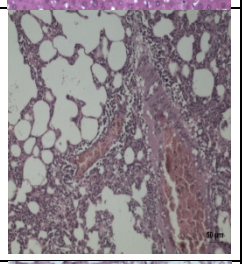
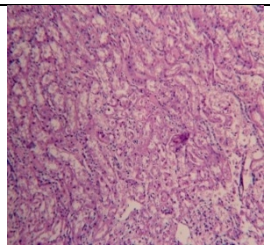
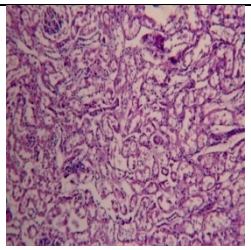
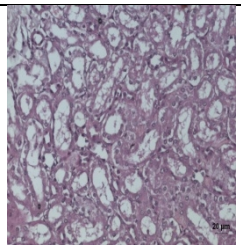
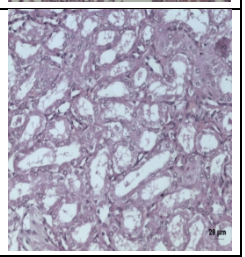
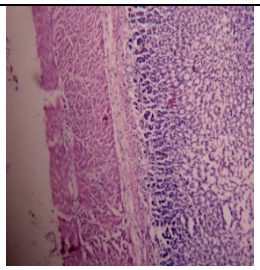
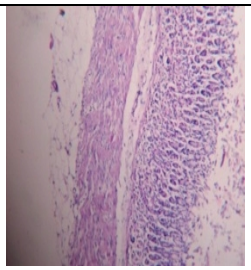
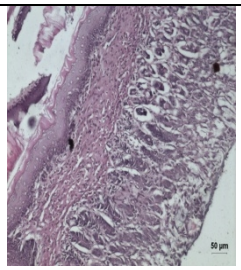
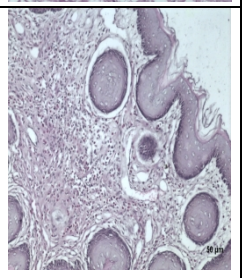
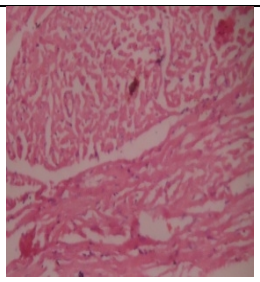
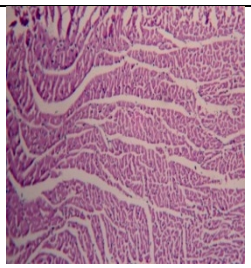
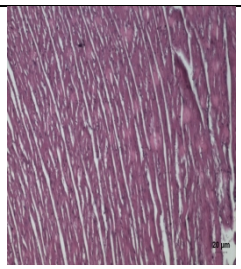
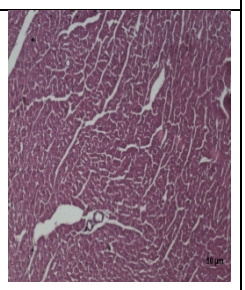
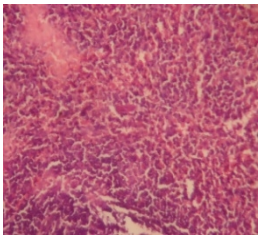
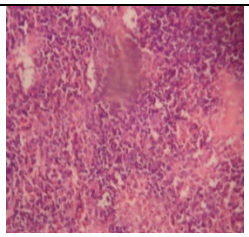
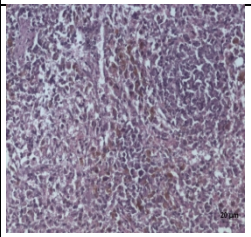
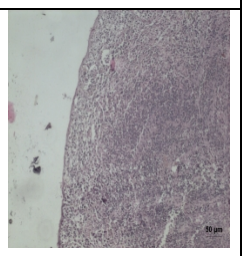
Zingiber officinale Rosc. (Zingiberaceae), Rhizome
Piper nigrum Linn. (Piperaceae), Fruit
Piper longum Linn. (Piperaceae), Fruit

Certificate No: NIS/MB/38/2012

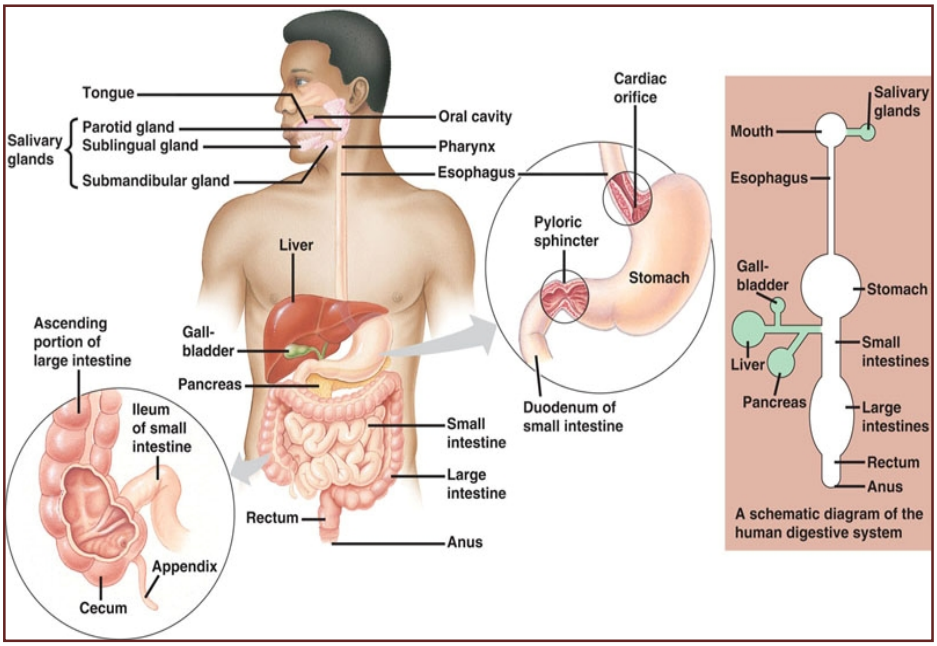
Date: 21-3-12

Authorized Signatory
Dr. D. ARAVIND, M.D.(s),M.Sc.,
Assistant Professor
Department of Medicinal Botany
National Institute of Siddha
Chennai - 600 047, INDIA

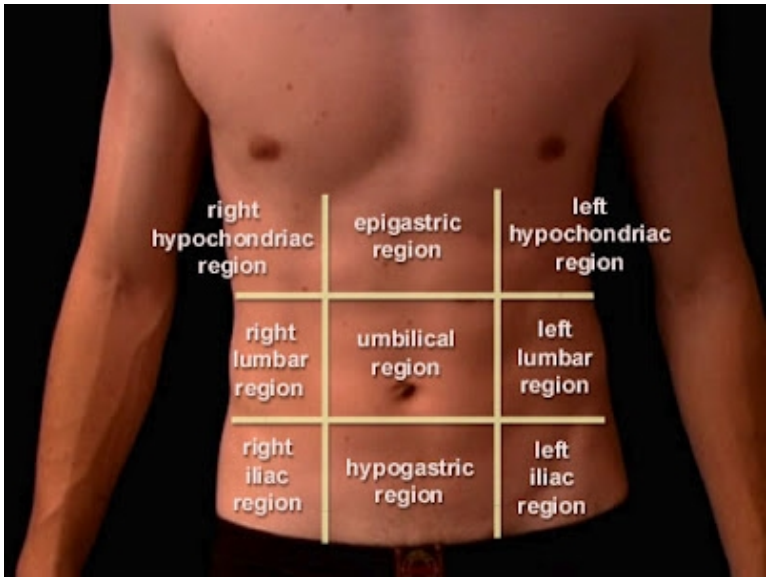
HISTOPATHOLOGY PHOTOS

	GROUP – I CONTROL	GROUP – II (1 X)	GROUP – III (5 X)	GROUP – IV (10 X)
LIVER				
LUNGS				
KIDNEY				
STOMACH				
HEART				
SPLEEN				

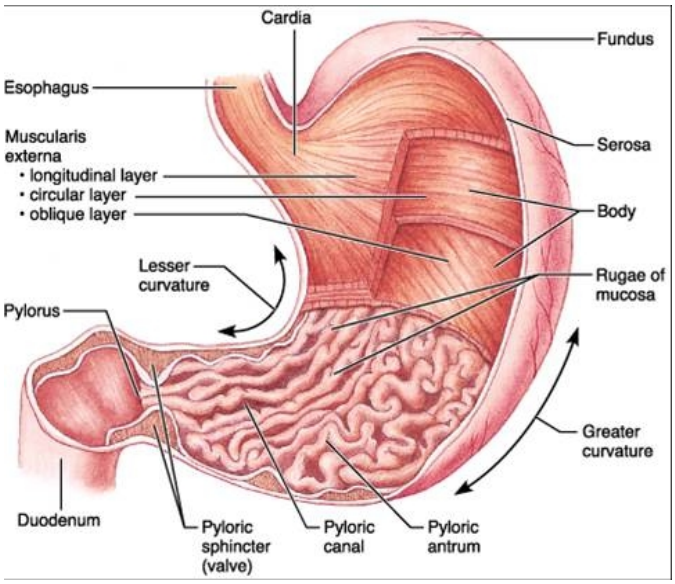
DIGESTIVE SYSTEM



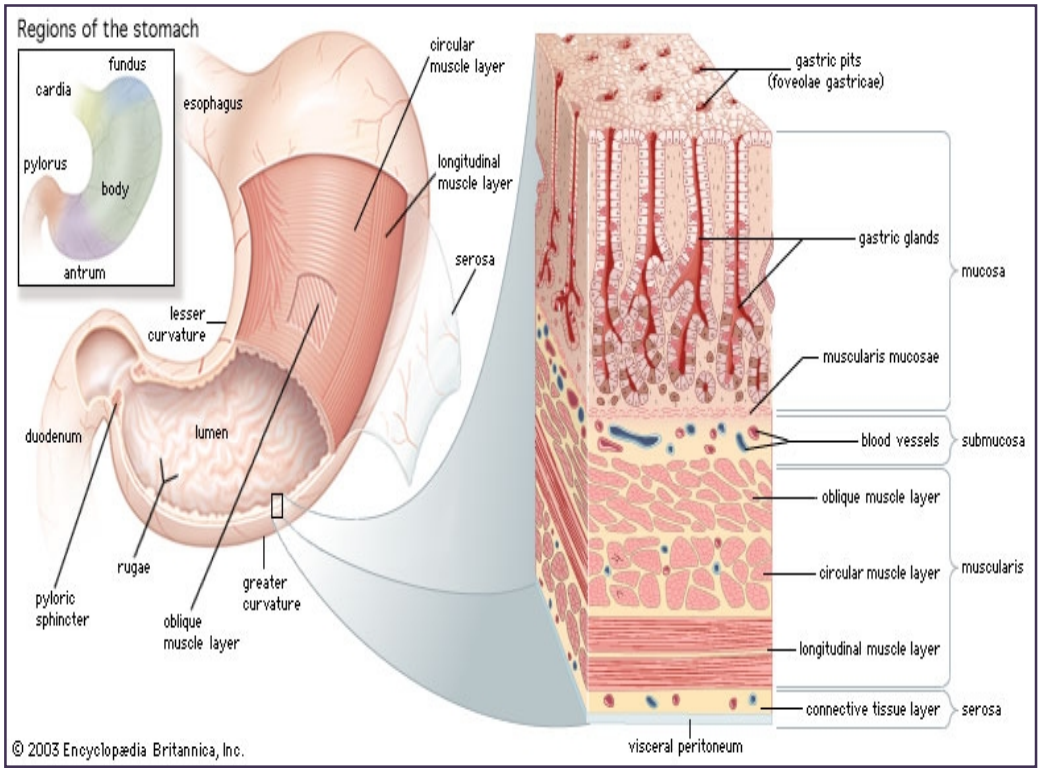
NINE REGIONS OF THE ABDOMEN



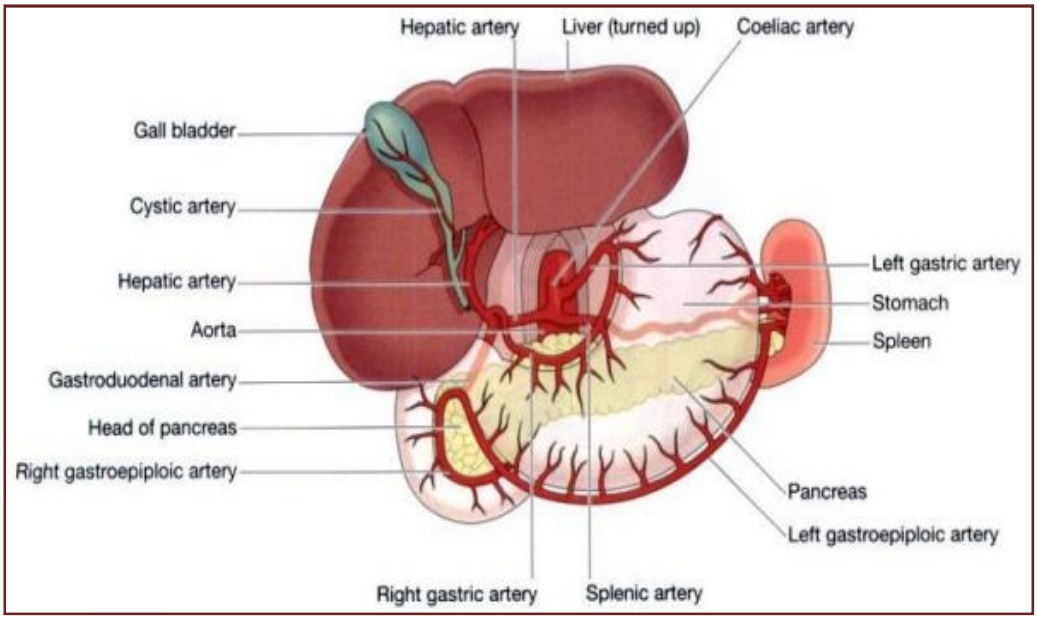
ANATOMY OF THE STOMACH



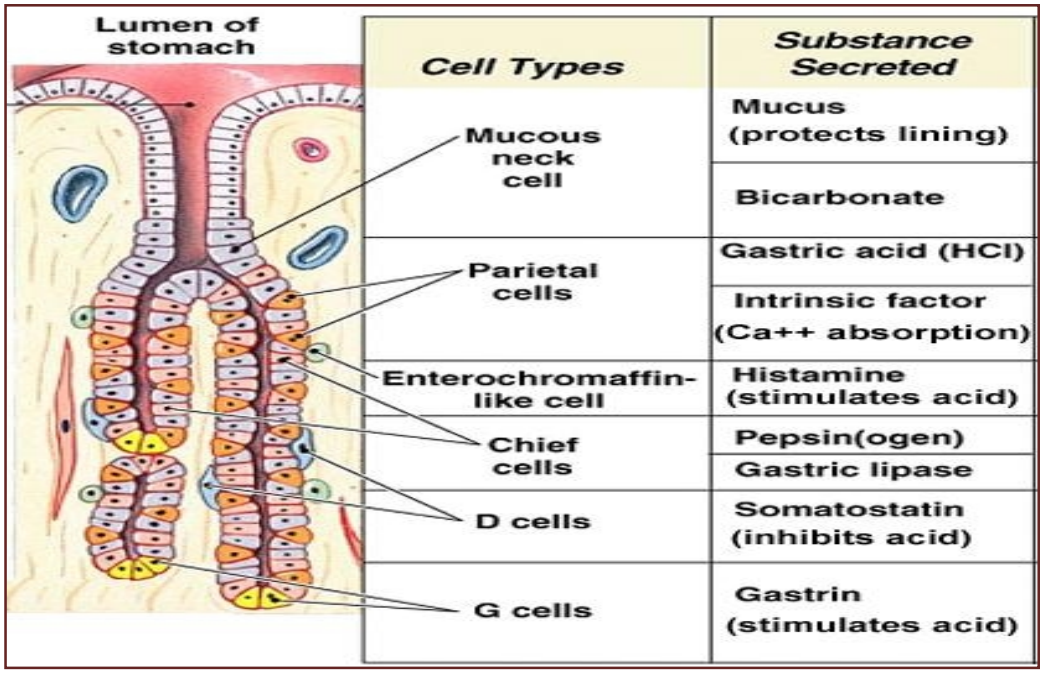
STRUCTURE OF THE STOMACH



BLOOD SUPPLY



GLANDS OF STOMACH



SOPHISTICATED ANALYTICAL INSTRUMENT FACILITY
INDIAN INSTITUTE OF TECHNOLOGY, MADRAS
Chennai - 600 036. INDIA

CERTIFICATE

Certified that the mineral drug Vediyuppu kattu formulated by Dr.S.Senthil Karunakaran, Dept of Maruthuvam, National Institute of Siddha, Tambaram Sanatorium, Chennai – 47 was analyzed (Quantitative) by Physico-Chemical, SEM,ICP and Phyto chemical methods at SAIF, IITM, Chennai – 36 during October 2012.

Dr. R. MURUGESAN
Scientific Officer Gr.-I
Sophisticated Analytical Instrument Facility
Indian Institute of Technology, Madras
Chennai-600 036

Phone : 91-44-2257 4935 Fax : 91-44-2257 0545, 2257 0509